DOCUMENT RESUME

ED 173 190 IR 007 850

AUTHOR Sharman, Kevin James
TITLE Children's Television Behaviour: Its Antecedents and Relationship to School Performance. A Study of the Television Viewing Behaviour of Children in Grade 6 of State Primary Schools in the Metropolitan Area of Melbourne. Occasional Paper No. 14.
INSTITUTION Australian Council for Educational Research, Hawthorn.
PUB DATE Jun 79
NOTE 93p.

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS *Academic Achievement; Children; Cluster Analysis; *Commercial Television; Demography; *Elementary School Students; Family Influence; *Individual Characteristics; Multiple Regression Analysis; Sampling; School Surveys; *Television Research; *Television Viewing; Viewing Time

ABSTRACT

A study was conducted to describe the television viewing habits of grade 6 children in primary schools within the metropolitan area of Melbourne, Australia; to examine the nature of the relationships between factors found to be relevant in explaining television behavior; and to examine the relationship between television behavior and school achievement. Data were collected from a 2-stage cluster sample of 271 grade 6 children using a questionnaire; tests of intelligence, self-esteem, and comprehension in social studies; and a diary of television viewing over a period of seven days. A questionnaire was also completed by the subjects' teachers. Statistical analyses involved simple descriptive statistics, bivariate correlation and multiple regression analyses, and canonical analysis. The hypothesizing and subsequent testing of causal path models of the interrelationships between variables enabled the study to cope more efficiently with the complex interrelationships between variables. Results confirmed the important influence that television has on the lives of children, and the importance of home background variables and personal characteristics in influencing television viewing patterns. (Author/CMV)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED179190

CHILDREN'S TELEVISION BEHAVIOUR:

ITS ANTECEDENTS AND RELATIONSHIP TO SCHOOL PERFORMANCE

A Study of the Television Viewing Behaviour of Children in Grade 6 of State Primary Schools in the Metropolitan Area of Melbourne.

U.S. DEPARTMENT OF HEALTH
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

by

Kevin James Sharman
Melbourne State College

Occasional Paper No.14 - June 1979

"PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY

Don Maguire

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

The Australian Council for Educational Research Limited
Frederick Street, Hawthorn 3122 Victoria

IR000850

Published by The Australian Council for Educational Research Limited
Frederick Street, Hawthorn, Victoria, 3122.
Printed and Bound by
Jenkin Buxton Printers Pty Ltd, 1-13 Abbotsford Street, West Melbourne 3003.

Cataloguing-in-Publication data.

Sharman, Kevin James

Children's Television Behaviour

(Occasional paper; No.14)
ISBN 0 85563 194 5

1. Television and children I. Title. (Series; Australian Council for Educational Research. Occasional paper; No.14)

301.162

Copyright © Kevin James Sharman 1979

No part of this book may be reproduced in any form without permission from the publisher.

CONTENTS

		Page
ACKNOWLEDGMENTS		
CHAPTER 1	INTRODUCTION	1
CHAPTER 2	REVIEW OF PREVIOUS RESEARCH	4
	Television Behaviour	4
	What Time do Children Devote to Television at Home?	4
	What do Children Watch?	6
	Factors Influencing the Television Behaviour of Children	8
	Age	9
	Sex	9
	Intelligence	10
	Home Background	10
	Peer Association	11
	Television as an Escape	12
	Impact of Television Viewing on Pupil Achievement	14
	Summary	17
CHAPTER 3	CONCEPTUAL FRAMEWORK: PROPOSITIONS FOR INVESTIGATION	18
	Path Analysis	18
	Path Models to be Examined in This Study	19
	The Examination of Multiple Criteria	23
CHAPTER 4	SCOPE AND DESIGN OF THE STUDY	25
	The Sample	25
	Data Collection	27
	Key Variables and Their Measurement	31
CHAPTER 5	THE PATTERN OF TELEVISION VIEWING	34
	Pattern of Television Viewing	
	Accessibility to Television	34
	Hours Viewed	35
	Channels Viewed	39
	Programs Viewed	40
	Other Aspects of Television Viewing Behaviour	40
	Sex Differences and Television Viewing	43
	Factors Influencing Television Viewing	46
	Home Background and Television Viewing	46
	Personal Characteristics and Television Viewing	47

		Page
	Television Viewing and School Performance	52
	Summary	54
CHAPTER 6	CAUSAL INTERRELATIONS	55
	The Path Models	55
	Factors Influencing Television Viewing	57
	Television Viewing and School Performance	59
	Comprehension in Social Studies	61
	Overall School Achievement - Teacher Assessment	61
	Canonical Analysis of the Pattern of Television Viewing	64
	Hours Viewed in Program Categories	64
	Channels Preferred	67
	Other Aspects of Television Viewing	70
	Summary	70
CHAPTER 7	CONCLUSION	72
	Results of the Study	74
	Implications for Further Research and Practice	77
REFERENCES		80

TABLES

		Page
Table 4.1	Variables and Their Measurement	31
Table 5.1	Hours Viewed Per Week (Questionnaire)	36
Table 5.2	Hours Viewed Per Week (Television Viewing Diary)	37
Table 5.3	Hours Viewed for Each Channel	39
Table 5.4	Hours Viewed for Each Program Category	41
Table 5.5	Favourite Programs	42
Table 5.6	Responses to Questions on Aspects of Television Viewing Behaviour	43
Table 5.7	Sex Differences and Television Viewing Behaviour	45
Table 5.8	Correlations Between Home Background Variables	47
Table 5.9	Correlations Between Television Viewing Variables	48
Table 5.10	Correlations Between Predictors and Criteria: Home Background and Television Viewing	49
Table 5.11	Correlations Between Personal Characteristics	50
Table 5.12	Correlations Between Predictors and Criteria: Personal Characteristics and Television Viewing	51
Table 5.13	Correlations Between Measures of School Performance	52
Table 5.14	Correlations Between Predictors and Criteria: Home Background, Personal Characteristics, Television Viewing and School Performance	54
Table 6.1	Unstandardised and Standardised Regression Weights for the Path Models	56
Table 6.2	Canonical Analysis Between Predictors and Criteria (Program Categories): Chi-Squared Tests of Successive Latent Roots	65
Table 6.3	Transformation Weights and Structure Coefficents for Canonical Analysis between Predictors and Criteria (Program Categories)	66
Table 6.4	Canonical Analysis between Predictors and Criteria (Channels Viewed): Chi-Squared Tests of Successive Latent Roots	68

Page

Table 6.5 Transformation Weights and Structure Coefficients for Canonical Analysis between Predictors and Criteria (Channels Viewed) 68

Table 6.6 Canonical Analysis between Predictors and Criteria (Aspects of Television Behaviour): Chi-Squared Tests of Successive Latent Roots 69

Table 6.7 Transformation Weights and Structure Coefficients for Canonical Analysis between Predictors and Criteria (Aspects of Television Behaviour) 69

FIGURES

		Page
Figure 3.1	A Path Diagram for a Causal Model of Total Television Viewing Time	20
Figure 3.2	A Path Diagram for Causal Models of Comprehension in Social Studies and Overall School Achievement	22
Figure 5.1	Hours Viewed Per Week (Questionnaire)	36
Figure 5.2	Hours Viewed Per Week (Television Viewing Diary)	38
Figure 5.3	Responses to Questions on Aspects of Television Viewing Behaviour	44
Figure 6.1	A Path Diagram for a Causal Model of Total Television Viewing Time	57
Figure 6.2	A Path Diagram for a Causal Model of Comprehension in Social Studies	60
Figure 6.3	A Path Diagram for a Causal Model of Overall School Achievement - Teacher Assessment	62

ACKNOWLEDGMENTS

The writer is indebted to the following persons for their assistance in this investigation:

the principals, teachers and Grade 6 children of the ten state primary schools who willingly participated and co-operated;

Dr J.P. Keeves, Director of the Australian Council for Educational Research, who implanted the idea and maintained my motivation with encouragement and assistance in all aspects of the investigation;

Mr G. Elsworth, Head of the Tertiary Education Research Unit of the Melbourne State College who offered valuable advice on the statistical procedures used in the analysis of the data.

Kevin J. Sharman

CHAPTER 1

INTRODUCTION

The home, school, church and peer group are generally recognized as the major variables of the environment which interactively influence the educational outcomes of individuals and their emergence as members of society. Yet, increasingly the mass media, especially television, is exerting an impact on the development of individuals and the formation of their behaviour and attitudes. Most children in developed countries have easy access to the television set, they accept it and use it as a normal part of their living and their use of it begins in preschool years. Its importance to children and the actual and potential impact that it has, is well recognized by adults who form pressure groups to attempt to influence the content and quality of the programs, by governments who institute inquiries into its effect and impact and legislate for its control, by teachers who devise curricula around the medium and by business interests who pitch their advertisements at the child audience.

Television is relatively of recent origin and its entrance into the home has occurred within the last three decades in all countries, and yet it is hard to imagine a single media development, apart from the printed word, which has had more impact on the daily lives of individuals. In Australia television commenced in Sydney and Melbourne towards the end of 1956 and colour transmission officially began in March 1975. A recent survey (George Patterson Report, April, 1976) suggests that as at December 1975 all but 2-3 per cent of Australian homes can receive television transmissions and that approximately 94 per cent of all homes in Australia have at least one television set. Another audience survey (McNair Anderson Associates, 1977) shows that 60 per cent of Melbourne homes have a colour television set and 25 per cent have more than one set.

When television made its dramatic entrance into the home, it was greeted with mild to strong reactions with many of the early reactions tending to be extreme, particularly when the focus of attention was the possible impact of this new and powerful medium on children. On the one hand, attitudes were fraught with anxiety and panic. Television would be harmful to children: family life would decline, school work would suffer, eyesight would deteriorate, values would be eroded, children's taste debased, their behaviour would become addictive and withdrawn, and delinquency and juvenile crime and violence would increase. On the other hand, attitudes were filled with aspiration for the new medium as a powerful instrument for the education and entertainment of

children and adults. Television would become the 'window of the world' stimulating children's interests and curiosity in the world about them by bringing to them, in their home, realistic visual experiences not able to be obtained by other media. Since its inception the impact of television on children has been subject to a good deal of research and comment to the point that a great deal is now known about its nature and influence although there still remains a good deal to be done. It is apparent in the literature that many of the early extreme attitudes have levelled off with the pure value judgements and glib opinions being replaced by judgements based on research and legitimate analysis. During the past 30 years, there have been several major studies covering a wide range of issues involved in children's relationship to television (Himmelweit, Oppenheim and Vince, 1958; Schramm, Lyle and Parker, 1961; Furu, 1971) and hundreds of smaller scale investigations on specific aspects, many of which have remained unpublished.

Governments too have shown their concern about the potential impact of television on the behaviour and educational outcomes of children. In the last decade there has been an inquiry in the United States into the impact of televised violence on children (Surgeon General's Scientific Advisory Committee on Television and Social Behaviour: Report, 1972); a Royal Commission in Canada investigated violence in the communications industry (Royal Commission on Violence in the Communications Industry: Report, 1977); and in Australia a Senate Standing Committee has just published its report on an inquiry into the impact of television on the development and learning behaviour of children (Senate Standing Committee on Education and the Arts: Report, 1978).

The research literature in the area seems to fall into broad groups according to the kinds of questions which are posed by the researchers about children's relationship with television: descriptions of viewing behaviour; factors influencing television viewing behaviour; impact of television on children's leisure and other activities; children's tastes in and reaction to the content of television programs; and the impact of television on children's values, knowledge, physical and mental health, and social behaviour have been the major issues for researchers. However, in Australia, although it has been over twenty years since television transmission began there has been a dearth of serious and professionally conducted research into the area. There have been some notable exceptions in Campbell and Keogh (1962) and Clark and Olley (1958), Olley (1962) and Belson (1967), and in recent years there has been somewhat of an upsurge of interest (Powell, 1971; Hammond

and Gleser, 1971; Tindall and Reid, 1975; Emery and Emery, 1975; Clark, 1975; Tindall, Reid and Goodwin, 1977; Edgar, 1977; Murray and Kippax, 1977).

The studies by Tindall, Reid and Goodwin of Sydney children from 5 to 18 years have provided valuable bench mark data on which to assess the implication of overseas research for Australia, and were undertaken largely out of concern for the lack of Australian data relating to use of television by children and the impact of the medium on them. In a series of questions for further research Tindall and Reid (1975) suggested: 'To what extent are socio-economic status, intelligence, school achievement and peer group standards reflected in television viewing?' as an important question for further investigation.

The Senate Standing Committee also expressed its concern over the lack of Australian research in this area and recommended that research into the alleged harmful effects of television on the learning behaviour of children be given a high priority. It is also proposed to take up these two important issues in this study.

In addition, with the development of the computer and the development of statistical techniques which enable the analysis of complex sets of data, it is now possible to examine the way variables act on each other directly, and indirectly through other mediating variables, with these variables taken either individually or in sets. The techniques of path analysis, which employs multiple regression, and canonical correlation analysis will be used in this investigation to tease out such relationships as they apply in the area of children's television behaviour.

The purposes of the study are threefold.

1 To provide a description of the pattern of television viewing behaviour for Grade 6 children in state primary schools within the metropolitan area of Melbourne.

2 To examine in an Australian context the nature of the relationship between home background, peer group association, intelligence and self esteem as predictors of television viewing behaviour and to distinguish the direct effect of the predictors and their indirect effect through intervening variables.

3 To examine in an Australian context the relationship between television viewing behaviour and school achievement.

CHAPTER 2

REVIEW OF PREVIOUS RESEARCH

This Chapter will commence with a survey of the research that has been conducted into children's pattern of television viewing and the factors which have been suggested to explain the differences in the television behaviour of children. The Chapter will then proceed to examine the previous research which has investigated the relationships between television viewing and school performance.

Television Behaviour

The pattern of television viewing is a fascinating area of study for social scientists. It offers a situation where the stimulus, the television programming, is common for very large numbers of persons of all ages, but the response to this stimulus differs from family to family and within families from individual to individual. Social scientists have sought to explain the differences in responses and to suggest explanations in the relevant social and psychological factors which impinge upon behaviour. Two responses which research workers have sought to explain have been the amount of viewing and the program preference of the individual and with respect to children the factors which have been presented as possible contributors in explaining the differences in amount of viewing and program choice include, age, sex, intelligence, home background, family and social relationships, personality traits and psychological adjustment.

In the early stages carried out soon after the advent of television, it was possible to compare samples before and after the introduction of television or to compare communities with television with communities without television as controls. In later studies, carried out when the penetration levels of television approximated 100 per cent of homes, the investigators adopted the approach of comparing light with heavy viewers and the particular social and psychological variables associated with each group thereby seeking to explain the differences in television use.

What Time do Children Devote to Television in the Home?

All studies concerned with estimating the time children devote to home television viewing have revealed the substantial amount of time given to this pastime. Moreover, the studies which have been concerned with the relationship of television use to other media use have revealed the paramount importance

of television. The typical child in the first 16 years of his life spends at least as much time in front of the television set as he does in front of his teachers at school. Television is accepted by the child as a normal part of every day life. Viewing begins early and by the age of three the average child is already making fairly regular use of television.

The study by Himmelweit, Oppenheim and Vince (1958) in the United Kingdom found that television watching by both the 10 to 11 and 13 to 14 year age groups averaged 11 to 13 hours per week or just under two hours per day and that the children spent more time on television viewing than any other single leisure activity. There appeared to be no significant difference in the amount of television viewed by the younger and older children but younger children watched more children's television and less evening television than adolescents. Most children viewed fairly selectively and regularly consulted the viewing guides. It was suggested that the popular picture of the child glued to the television set did not fit the facts. A German survey (Muletyke, 1959) showed an average figure of between 7 and 8 hours per week for persons age 15 to 20 years. However, surveys in North America and Australia have revealed that much more time was devoted to television. Schramm, Lyle and Parker (1961) provided the following figures for North America.

> A child who has begun to use television by age three typically uses it about 45 minutes a weekday (Monday through Friday). By age five, his viewing has increased until, on the average, it is a little over two hours a day. From age six until about the sixth grade, when the child is entering adolescence, viewing time is on a slowly rising plane between two and two-half hours. Then viewing time rises rather sharply to a high of a little over three hours a day. This hump usually occurs somewhere between the fifth and eighth grades. Then it enters upon a slowly falling slope until by the twelfth grade (about age seventeen) it is again between two and two and one-half hours. These are weekly figures. Sunday viewing averages from one-half to one hour longer. (Schramm, Lyle and Parker, 1961:30)

In Australia Thomas and Lang (1966), in their study of secondary school children in the greater Geelong area, showed that Form 1 boys and girls viewed an average of 23.9 and 22.2 hours per week respectively which declined to 10.9 hours and 6.4 hours for Form 6 boys and girls respectively.

Powell (1971) reported that on an average weekday, 13-year-old students in Melbourne watched for 3 hours 40 minutes with little difference between boys and girls, while an Australian Broadcasting Commission survey in 1973 showed that children in the 3 to 6 years age group averaged 2 hours 26 minutes per day viewing television.

The recent surveys of Tindall and Reid (1975) and Tindall, Reid and Goodwin (1977) of Kindergarten to Year 12 children in Sydney found figures comparable to the earlier surveys. In the earlier survey weekly viewing time averaged 21 hours 12 minutes over the age range of 5 to 18 years with a peak viewing occuring in the Year 7, 8 and 9 group (12 to 14 years). However, it must be pointed out that there are difficulties in the task of estimating television viewing time which would need to be taken into account in drawing comparisons between different studies; these estimation difficulties are discussed in Chapter 4 below.

The figures relating to amount of viewing were averages and taken alone give no indication of dispersion and for a particular age group this could be quite wide. For example, Powell (1971) found an average time of 3 hours 40 minutes per week day for 13-year-old children but about 20 per cent of the children viewed more than five hours with about 17 per cent of the children still viewing at 10.30 pm. Tindall and Reid (1975) classified 35 per cent of 8- to 12-year-olds and 45 per cent of 13- to 15-year-olds as heavy viewers, viewing more than 21 hours per week.

In order to accommodate large amounts of viewing it is apparent that a substantial number of children would spend most of their non-school time in front of a television set and viewed at times usually reserved for adult programs. Breakfast with television was not uncommon; for any half hour before school, 7.00 am to 9.00 am, about 11 per cent of school children in Sydney were estimated to be watching television and that occasional early morning viewing was the exception rather than the rule (Tindall and Reid, 1975). In the follow up study (Tindall, Reid and Goodwin, 1977) this figure had increased to 18 per cent. The prevalence of early morning viewing would appear to be related to age with younger children likely to view television before school (Lyle and Hoffman, 1972). Tindall, Reid and Goodwin (1977) estimated that 34 per cent of Sydney children in the lower grades of primary school viewed television before leaving for school.

What do Children Watch?

The reality of children's experiences and responses in relation to television today is that it has become an important factor in their lives. They accept it as a normal part of their living, they like television, it has become a source of fascination for them and a major source of recreation; it provides the greatest source of their common experience.

The first television programs which became favourites of pre-school children were those classified as children's programs but as the child grew older other types of programs, for example, family situation comedies became more important; viewing of adult programs started towards the later part of the elementary school years (Schramm, Lyle and Parker, 1961). Himmelweit, Oppenheim and Vince (1958) found for both the 10 to 11 and 13 to 14 age groups that children regularly viewed large numbers of adult programs. Although most viewed them selectively, three quarters of the preference vote for the most favoured program went to adult programs particularly crime thrillers and to a lesser extent, to comedies, variety programs and family serials. Adult news, political documentary and discussion programs held little appeal even for the more intelligent children.

The Australian study by Powell (1971) of early adolescent children revealed a bias away from the Australian Broadcasting Commission channels toward the commercial channels. Only about one quarter of the children watched news programs; cartoon programs were popular and documentary programs were viewed by only about 15 per cent of the children over the three day period of data collection.

Tindall, Reid and Goodwin (1977) found a similar bias away from the ABC channel to Powell (1971) but found no preference for any one of the commercial channels. It was found that age and sex were clear influences of the choice of favourite programs. Clearly family situation type programs and cartoons were stated favourites for lower and upper primary school children with police drama and pop culture programs rating high in the preferences of secondary school children. News and documentary programs were not popular.

As a general conclusion the pattern of program preference revealed overwhelmingly a preference by children for fantasy type programs. The major function which television seemed to perform for children was that of stimulating fantasy and fantasy behaviour as distinct from reality orientated experiences.

Children's overwhelming preference for fantasy type programs would appear understandable in terms of children's attitudes to the medium and the gratifications it would provide. Children perceived television primarily as a source of entertainment.

> They viewed television for the passive pleasure of being entertained, living a fantasy, taking part vicariously in thrill play, identifying with exciting and attractive people, getting away from real life problems and escaping real life boredom - in other words, all the gratifications that come from having a superlative means of entertainment

in one's living room, at one's command. (Schramm, Lyle and Parker, 1961:57)

While they acknowledged that they learnt from television and that it provided information (Schramm, Lyle and Parker, 1961; Lyle and Hoffman, 1972) these benefits were seen as incidental to the main function of entertainment.

Television was also attractive to children for the social utility it provided: something for the group to do, and the previous night's television provided a shared experience for discussion at school the following day. Children felt 'out of things' if for some reason the peer group's favourite program had been missed.

These conclusions regarding the attitude of children towards television were supported by Furu (1971) but he made the additional point that Japanese children quite often expressed negative attitudes to television because of a 'self consciousness' towards wasting time watching television and its hindrance in the undertaking of other activities.

In a recent Australian study (Murray and Kippax, 1977) children's attitudes to the media were gauged in three towns one of which had no television, and found that the children's perception of the function of the media was characterized by two dimensions. The children, in general, perceived the media as being informational (newspapers, radio) and entertaining (cinema). Television was perceived to lie between, the children perceiving television to be both entertaining and informative. In terms of an evaluation television was rated in a relatively positive manner. Television was found to be interesting although evidence was produced to indicate that this interest declined as the community became more accustomed to television and the novelty effect wore off. About 70 per cent of the children felt that television had a good effect on their lives with about 50 per cent mentioning educational benefits such as 'helping with school work' or 'increased knowledge of current events'.

Factors Influencing the Television Behaviour of Children

A considerable number of studies have been concerned with the relationship between the television behaviour of children and the factors related to that behaviour. Possible antecedents of television behaviour suggested by these studies include: age, sex; intelligence; home background, peer group influences; and personal characteristics such as self esteem and anxiety.

Age

The relationships between age and amount of television viewing is well founded in the literature. The regular use of television was found to begin at about age 2 to 3 years for North American children and to peak at about age 11 to 13 years with a notable decline into late adolescence due to the competing educational and social pressure for teenagers (Schramm, Lyle and Parker, 1961; Lyle and Hoffman, 1972). This relationship was also found for Australian children although the peak viewing age would appear to be about a year later (Tindall and Reid, 1975; Tindall, Reid and Goodwin, 1977).

Program preference was also found to vary with age and this relationship was confirmed in the very recent Australian study by Murray and Kippax (1977). They reported a marked decrease in the viewing of educational programs with increasing age and a minimal but steady increase in the viewing of news and documentary programs by older children. The viewing of general children's entertainment programs was reported to peak at about 5 to 7 years. Action-adventure, crime and drama programs were found to become popular in later childhood.

Sex

Overwhelming surveys in Britain, USA and Australia have indicated that there was little difference in the amount of television viewing between boys and girls. (Himmelweit, Oppenheim and Vince, 1958; Schramm, Lyle and Parker, 1972; Tindall and Reid, 1975).

Furu (1971), as the exception, reported that studies in Japan including his own, revealed consistently that Japanese boys viewed greater amounts of television than girls. A fact which he accounted for in the different role expectations of Japanese boys and girls. In Japan according to Furu, less demands would be made on boys than girls to help in the household chores.

However, there was a likely relationship between sex and program preference. The findings of Himmelweit, Oppenheim and Vince (1958); Schramm, Lyle and Parker (1961); Bailyn (1959) and, in Australia, Edgar (1974, 1977), were fairly consistent in their conclusions regarding sex and program preference. Edgar (1977) examined the relationship between sex and preferred program in detail for Melbourne children in lower secondary schools. She employed factor analysis on the program preferences as indicated by the children to define the taste dimensions and found that sex role identification was a major variable in the differentiation of the preferred programs of boys

and girls. Boys tended to prefer exciting active violent programs with aggressive male heroes while girls preferred more passive programs centring around social empathy and romantic themes with heroes who did good things and were female.

Intelligence

A relationship between intelligence and both amount and pattern of viewing was supported by the research. In general, the less intelligent child tended to watch more television than the brighter child. Himmelweit, Oppenheim and Vince (1958) suggested that intelligence was the single most important background factor in explaining the amount of television viewing.

Schramm, Lyle and Parker (1961) reported that in early school years brighter children tended to watch more television but between 10 and 13 years the more intelligent children dramatically disappeared from the heavy viewer group. The reason suggested for this change was that in the early years the brighter children sought out any intellectual stimulus. They did more of everything - watched television, read books, listened to the radio; but when they became older, television ceased to be a challenge to them relative to the rewards obtainable from the other media and other activities.

In Australia the inverse relationship between intelligence and amount of viewing was reported by Tindall and Reid (1975), but by contrast an earlier study (Powell, 1971) found no such relationship between intelligence and total viewing but did find that the more intelligent the child the greater the viewing of programs on the Australian Broadcasting Commission channel (ABV2) pointing to a possible relationship between intelligence and program preference.

Home Background

There have been a number of studies which have attempted to show a relationship between one or more of the home background variables and television viewing. Studies on the relationship between social class, variously defined, and television behaviour have not shown consistent results but have shown a general trend towards children of lower class families viewing more television than children of higher social status homes. Studies which have supported the relationship were: Blood (1961); Schramm, Lyle and Parker (1961); Furu (1971); Tindall and Reid (1975).

It was evident, however, that the relationship was a complex one. Himmelweit, Oppenheim and Vince (1958) found that the social level of the

home proved to be of little importance in affecting how much children viewed suggesting that parental example and parental control were more important than social class. In homes where parents themselves were selective and moderate viewers, the children also tended to view relatively little although it was found that there was much individual variation between members of the same family. The relationship between heavy viewing parents and heavy viewing children was supported by Greenberg, Ericson and Vlahos (1972). Bailyn (1959), from a study of the exposure habits and cognitive effects on children in Grades 5 and 6 in Boston suggested four factors in order of importance as being related to exposure to the pictorial media: parental restriction on the amount of exposure, the child's IQ, occupation of the father, and religion. Children whose parents attempted to control the viewing of their children, saw less of the pictorial media, as did children whose fathers had higher status occupations and who belonged to protestant families.

Generally American parents seemed to exert little control over the viewing of their children but where such control was exercised less television was viewed (Surgeon General's Scientific Advisory Committee on Television and Social Behaviour: Report, 1972). Canavan (1974) in an Australian study, found that children of homes where children were the predominant controllers of the television set, tended to be heavier viewers than children of homes where family control was greater. It would be expected that social class would influence the viewing example provided by parents and the degree of control exercised on the television viewing of children. The evidence indicated that middle and higher class parents placed more restrictions on viewing both in terms of amount and content and provided more discriminating models of television viewing (Himmelweit, Oppenheim and Vince, 1958; Maccoby, 1954; Bailyn, 1959).

The installation of additional television sets in the home appeared to affect the amount of viewing. Chaffee, McLeod and Atkin (1971) reported that viewing time of both mothers and their adolescent children in multi-set homes was higher than in single set homes. The second set tended to become the children's set producing lower levels of conflict over program selection (Lyle and Hoffman, 1972).

Peer Association

The peer group association of the child has been recognized as a factor influencing the amount and nature of television viewing.

Membership of a peer group would involve a degree of conforming to the norms of that group. Children in discussing television viewing with other children would develop norms of television behaviour which would guide later viewing outside the group setting. Riley and Riley (1951) on the basis of interviews with 400 New York and New Jersey 10- to 12-year-old children examined the specific influence of group membership on television viewing and were able to establish the proposition that the viewing behaviour of members and non-members of the peer group differed. Those children who were not members of a peer group still had a need for affiliation and being unable to satisfy this need by peer association, satisfied it vicariously, without threat, through participation with characters in the media especially television. Riley and Riley (1951) found that children with poor levels of association with peers tended to be heavy viewers particularly of cartoons and other fantasy content programs.

Himmelweit, Oppenheim and Vince (1958) also found support for the relationship between peer group association and viewing behaviour; the insecure child who had difficulties making friends tended to view more heavily and to view fantasy orientated programs. Schramm, Lyle and Parker (1961) provided support for this proposition. They suggested that frustrations experienced in interpersonal relationships affected patterns of viewing and found that conflict with peers was associated with preference for fantasy orientated programs. However, a study by Murdock and Phelps (1972) found that the relationship between peer group association and television usage needed to be qualified for the influence of social class on media usage. They suggested that the orientation of the peer group was influenced by social class; a working class adolescent peer group was more orientated towards a street culture or a 'pop' media culture than a school orientation, and this orientation, which was a reflection of home background, influenced the use of media generally and program preference.

Television as an Escape

Television viewing was found to be related to personality factors and it was these factors which accounted for extremely heavy viewing patterns. Television might be seen by the child as a means of escape. Maccoby (1951) found that middle class children who experienced difficulty in the parent-child relationship spent more time with television than other middle class children. In situations where the environment imposed strain or conflict the child would be motivated to 'get away from it all' by immersing

himself in fantasy, thus providing an outlet for impulses which were not allowed free expression in real life. The television set provided a readily accessible source of fantasy and vicarious experience.

Bailyn (1959) found support for the proposition that certain children under certain conditions used the media as an escape from the problems and tensions of life. A child who had problems in his daily life, who had extra punitive tendencies (tended to blame others) and who was rebelliously independent would tend to rely on media as an escape mechanism.

Pearlin (1959) found a positive relationship between amount of stress and amount of escape viewing. Schramm, Lyle and Parker (1961) found that disparities between a child's own aspirations for himself and the perceived aspirations of his peers or parents were related to the high use of fantasy orientated media and low use of reality orientated media. The greater was the degree of parent-child conflict (where parent's aspirations are higher than the child's), the higher was the consumption of television, radio, and movies and the lower the use of magazines and books. Johnstone (1961) in a study of adolescent's use of media found that the lower one's self esteem, particularly in relation to peers, the more time one spent watching television. Katz and Foulkes (1962) suggested that a child who was unable to relate to others, escaped from those situations where he was required to interact, and vicariously participated in similar situations through identifying with characters on television. The rewards of a non-member of a peer group were high as he could gain rewards in terms of satisfaction of his needs for affiliation without the cost of having to interact in a social situation.

Powell (1971) found that low intensity viewers, who were also allowed freedom by their parents in the use of television, tended to be of higher IQ, were coping more easily with the demands of school, had a lower anxiety level and their preference was characterized by selectivity and a strong interest in documentary and news programs. The high intensity viewers on the other hand tended to be unselective in their choice of programs and watched more fantasy type material. These studies would appear to suggest that emotional disturbance and heavy television viewing were associated together and that for individual children excessive television involvement should be treated as a symptom of an underlying problem.

However, Furu (1971) found no support for a relationship between the amount of viewing and involvement in fantasy orientated media as criteria

and parent-child conflict and anti-social aggression as antecedents. When total viewing and total fantasy viewing were taken as the criteria, no relationship was found but Furu did find that children experiencing a high level of conflict with parents and exhibiting anti-social aggression, preferred aggressive hero-content programs, which supported the escapism hypothesis. Furu investigated other possible avenues for escape and found that the average high school student coped with problems experienced in a realistic way but when escapism was engaged in they resorted to behaviour such as thinking by themselves or playing sports in the case of boys and keeping a diary in the case of girls and not to passive activities of television watching.

Edgar (1977) investigated the relationship between self esteem as measured by the Coopersmith scale (Coopersmith, 1967) and media behaviour. She found low self esteem children used the media more than children who had a high regard for themselves; they viewed more television and movies, listened to the radio more and read fewer newspapers and books. A difference was also found in television program preference between children with high and low self esteem; low esteem children showing a preference for fantasy programs while high esteem subjects were more likely to prefer reality programs. The findings of Edgar would appear to support the escapism hypothesis; children who had a low self regard would resort to media especially fantasy content. However, self esteem should itself be viewed as an outcome, with the factors of relations with parents, interaction with peers, success at school considered its main antecedents (Coopersmith, 1967). Consequently it would appear to be necessary to consider the relationship of these factors to television viewing before any conclusions could be drawn about the relationship between self esteem and television viewing.

Impact of Television Viewing on Pupil Achievement

Since the inception of television there arose early concern as to the impact of home television viewing on student achievement. It has been argued that the time devoted to television viewing would affect school performance because other more worthwhile activities, for example homework and reading were engaged in less. Others have suggested that the viewing of certain television programs would reinforce work done in schools by broadening the child's horizon and experience of the world. The question: 'Does home television viewing affect school performance?' must be seen as a difficult one to answer because of the quantitative and qualitative dimensions of television viewing and because of the many other variables operating in a

complex and interactive way which could affect school performance. In addition, excessive television viewing which has been purported to adversely affect school performance might be a symptom of psychological disturbance (anxiety, frustration, aggression, conflict, low self esteem and other unsatisfactory human relationships) which might also be the major underlying cause of poor performance rather than the hours spent in front of the television set. It might also be that poor performance at school because of the psychological stresses that this would set up would cause heavier viewing.

The evidence reviewed would seem to indicate that when television was introduced it displaced activities previously engaged in and where children had grown up with television it had taken up a substantial part of their time. It would appear evident from the research that the activities replaced by television tended to be functionally related to television which suggested that time devoted to television would not be devoted to school related activities if television were not available. Activities which would tend to be displaced were listening to the radio, reading comics or playing with friends (Himmelweit, Oppenheim and Vince, 1958; Schramm, Lyle and Parker, 1961; Furu, 1971; Brown, Crammond and Wilde, 1974). The reading of books apparently suffered less than the other media (Himmelweit, Oppenheim and Vince, 1958; Maccoby, 1963). There would appear to be little, if any, impact of the introduction of television on the time devoted to homework after the novelty effect of its introduction had passed (Himmelweit, Oppenheim and Vince, 1958; Schramm, Lyle and Parker, 1961; Furu, 1971).

Some television programs have been produced with the prime objective of informing and educating the audience, while others (the majority) have the prime objective of entertainment but none the less would provide some experiences which promoted learning incidentally. As indicated above the gratifications which children sought from television were entertainment and fantasy rather than information, so that in the general sense television would not be a major source of educational experiences which would have major impact on performance at school. While acknowledging that any impact would be small it might well be that the impact differed interactively with other variables, for example, age and intelligence and was dependent also for the particular child, on the types of program preferred. The impact would also differ in relation to the particular aspect of school performance being measured.

Research into the relationship between television viewing and school achievement goes back to the early 1950's. One on the early researches was

done by Clark (1951) who in a correlational study of approximately 6000 children from Grade 6 and 7, in which data were collected on television viewing, intelligence, and school achievement, found that the learning of children at school was not much affected by the way parents controlled television viewing. He did, however, point out that high television viewing, lower intelligence, lower parental control and poorer school achievement tended to be found in the same child. Scott (1956) found that elementary school children who watched less hours consistently attained higher achievement scores. In a survey of British children, Duggan (1955) found, in a comparison of viewing and non-viewing children, no significant differences in time devoted to homework or school performance. Himmelweit, Oppenheim and Vince (1958) found that those children who did not watch television, generally, had better school performance than those who did watch television. Ridder (1963) found no relationship between academic performance and total hours spent watching television. Studies which attempted to relate school performance with television without taking into account other variables which could influence television viewing and school performance on the one hand and the type of program viewed and the components of school performance on the other have generally not been able to link television viewing and school performance. Studies have suggested that television does improve the vocabulary of the pre-school child but this effect disappeared soon after the commencement of formal schooling (Maccoby, 1963; Schramm, Lyle and Parker, 1961). Schramm, Lyle and Parker (1961) found an interrelationship between age, television viewing and general knowledge for sixth and tenth grade children; they also found that high television use children were superior in knowledge of topics related to the fantasy content of television but inferior in knowledge of subject matter more related to school performance.

Childers and Ross (1973) in a study of middle elementary level pupils found no significant relationship between television viewing hours, IQ and achievement scores and it appeared that type of program watched produced no result worth reporting. Starkey (1974) found for fifth and sixth graders a slight but significant correlation between the amount of leisure time spent watching television and reading ability; better readers were found to watch less television than poor readers and Atkin and Gantz (1974), on the basis of interviews with 703 children from Kindergarten to Grade 5 and their mothers found moderate correlations between frequency of television news watching and indices of political knowledge and general familiarity with current events.

Summary

In summary, this review of research has indicated the substantial influence that television has on children; it is a major leisure time activity and is seen by children as a source of entertainment rather than information. The programs that they prefer are heavily fantasy orientated in content. The use of television varies with age, and sex appears to be a variable influencing type of program preferred rather than the amount viewed. The amount of television viewing appears to vary inversely with intelligence and socio-economic status of the home although the degree of parental control and parental example are also important factors. Peer group pressure is also an important factor and there is also a good deal of evidence to suggest that heavy use of television particularly heavy viewing of fantasy programs may be a mechanism for escape from personal and emotional problems.

The studies dealing with the relationship between television and school performance show little if any effect, positive or negative. The relationship is likely to be marginal because of the known major impact of intelligence and home background on school performance. The impact of television may be two way: a displacement effect, that is, television taking up time which could be put to better use and a positive impact, that is television broadening the horizons of the child and providing him with visual experiences not otherwise available to him.

It would be expected therefore, that a child who seeks television as a source of information and therefore is more selective in his viewing habits would perform better at school than the child who resorts to television for entertainment or escape. This relationship however is complicated by the interaction of the other variables of age, sex, intelligence, home background and peer relationships. In addition the studies reveal a possible differential effect of television viewing in respect to the particular components of school performance. It may be that while the impact on overall school performance of television viewing may be undetectable, effect on particular aspects of performance may be positive or negative.

CHAPTER 3

CONCEPTUAL FRAMEWORK: PROPOSITIONS FOR INVESTIGATION

Television, although a leading component of the mass media, is only one of the many facets of the educational environment in which children grow and develop into adults. In an examination of the impact of the educational environment on student achievement Keeves (1972) identified the home, the school and the peer group as the major environmental situations affecting educational outcomes. In addition, he postulated within each of these environmental situations structural, attitudinal and process dimensions. However, the Keeves' paradigm for the study of educational environments did not include the influence of the religious and recreational institutions of society as contributing to the socialization and educational process of children and youth. Nor did he provide for the influence of the media. Nevertheless, the paradigm has supplied a useful theoretical framework for an examination of the impact of this additional component of the educational environment on outcomes of schooling. Moreover, it made provision for the operation of the environmental factors in an interactive way, indicating that any assessment of the impact of a single or set of factors could not be viewed in isolation from the other facets of the environment. Furthermore, a full examination of the impact of television could not justifiably be carried out in isolation from the other media or from the other components of the educational environment such as the home, school and peer group.

The review of previous research reported in Chapter 2 has indicated that the factors influencing the television viewing behaviour of children were interrelated in a complex way. The factors found in these studies to be relevant to explaining television viewing behaviour were found to be categorized in two broad groups: home background including level of parental control of viewing and personal characteristics. Taking selected variables from these sets, and the sets of television viewing variables and school performance variables, it would be possible to postulate models of the relationship between the variables and to subject these models to empirical testing using the data collected in this study. The appropriate technique for analyses of this type is path analysis.

Path Analysis

Path analysis is primarily a statistical technique, utilizing regression analysis, for examining and interpreting linear relationships among a set

of variables under the assumptions that the links between the variables involve a causal ordering and that the system is causally closed. It is a technique of hypothesis testing whereby models of the relationships between variables are postulated, the particular relationships arising from previous research, prior understanding and theory. Subsequently the models can be tested and found to be either consistent with the data or can be modified to produce more parsimonious models of the relationships between the variables examined.

The assumption of causation between variables warrants further comment. The nature of causation is a controversial issue among philosophers and researchers. It is not intended to review this controversy here but to state simply that in order to establish confidently causality between two variables one must perform an experiment so that a change in the dependent variable can be attributed to the independent variables alone. It must therefore be possible for the experimenter to hold all other variables constant by the random selection of cases for study. Correlations between variables do not show causation although they may be suggestive of causal links for further investigation. Path analysis is dependent on correlational analysis but it does not attempt to discover causal links. It applies a technique to a model which assumes causation and which is formulated by the researcher on the basis of prior knowledge and theoretical considerations.

Path Models to be Examined in This Study

In Figure 3.1 a path model is presented as showing the relationships between the factors, father's occupation as a measure of the socio-economic status of the home (x_1), IQ (x_2), parental control of television viewing (x_3), peer association (x_4), and self esteem (x_5), as major antecedents of total television viewing (x_6).

The model shows father's occupation, as a measure of socio-economic status, as being related to the intelligence of the child and parental control of viewing; IQ and parental control are also related. Father's occupation influences peer association which is also influenced by intelligence and parental control. Self Esteem is dependent on the occupation of the father, intelligence, parental control and peer association.

The child's self regard for himself as a person will affect the time spent viewing television, which is also directly influenced by father's occupation, intelligence, parental control and peer association. Father's occupation as a measure of status of the home, IQ, parental control and

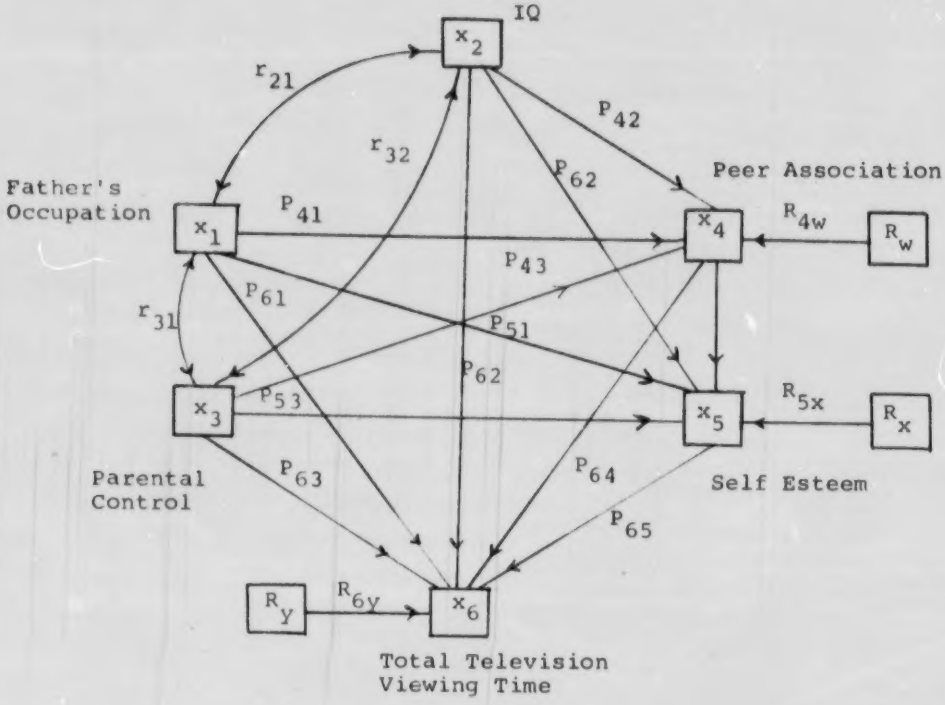

Figure 3.1 A Path Diagram for a Causal Model of Total Television Viewing Time

where

x_1 denotes Father's Occupation

x_2 denotes IQ

x_3 denotes Parental Control of TV Viewing

x_4 denotes Peer Association

x_5 denotes Self Esteem

x_6 denotes Total Television Viewing Time

R_w denotes disturbance variables associated with Peer Association

R_x denotes disturbance variables associated with Self Esteem

R_y denotes disturbance variables associated with Total Television Viewing Time

peer association will affect television viewing directly but also indirectly through the other variables. Father's occupation, intelligence and parental control, are variables which are exogenous to the system while all the other variables are seen to be endogenous.

It is hypothesized from the review of previous research and theory that:

fathers with higher status occupations would have intelligent children who because of their greater intelligence and coming from homes of higher status would develop greater peer group ties;

children from homes where control of television viewing was high would have higher levels of peer association and self esteem;

the greater involvement with peers the more television would be viewed because of the greater pressure to conform to group norms;

more intelligent children would tend to watch less television because it held their interest less;

children of high status homes would watch television less because of the wider range of other interesting activities available and also because high status homes might be associated with greater restriction of viewing;

children who felt badly about themselves because of a lower status home background, lower intelligence and difficulties in social relationship with peers would view greater amounts of television.

The school performance variables were added to the above model. In this study two school performance criteria were used, one being a measure of overall school achievement as rated by teachers, and the other involving a specific measure of performance, namely, comprehension in social studies. Figure 3.2 shows the model to be examined, by extending the previously postulated model. It can be seen that the viewing of television has been hypothesized as an important intervening variable. Father's occupation IQ, parental control, peer association and self esteem have been hypothesized as having a direct influence on both overall school performance and comprehension in social studies and an indirect effect through television viewing.

The models presented show the causal paths, conventionally indicated by straight lines to be unidirectional indicating that a variable cannot be both a cause and effect of another variable; the model is thus a recursive model. Relationships between variables not assumed to be causal are by convention shown by a curved line with arrow heads at each end (⟷) and its magnitude given the value of the zero order correlation coefficient.

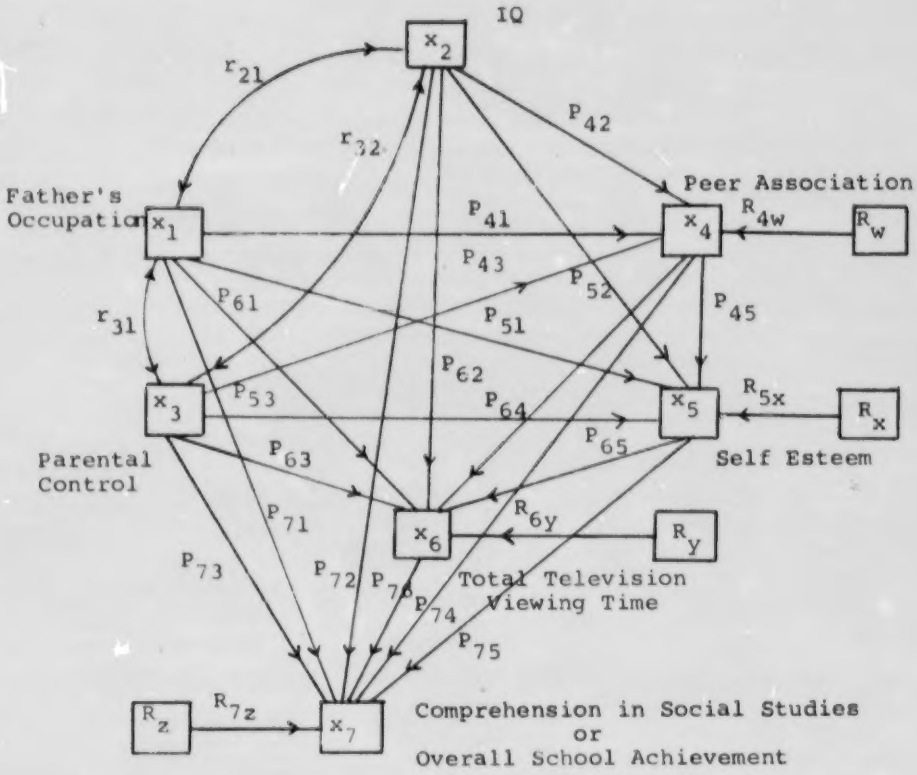

Figure 3.2 A Path Diagram for Causal Models of Comprehension in Social Studies and Overall School Achievement

where

x_1 denotes Father's Occupation

x_2 denotes IQ

x_3 denotes Parental Control of TV Viewing

x_4 denotes Peer Association

x_5 denotes Self Esteem

x_6 denotes Total Television Viewing Time

x_7 denotes Comprehension in Social Studies

R_w denotes disturbance variables associated with Peer Association

R_x denotes disturbance variables associated with Self Esteem

R_y denotes disturbance variables associated with Viewing Time

R_z denotes disturbance variables associated with Comprehension in Social Studies or Overall School Achievement

The path coefficients of the causal paths are the standardized partial regression coefficients or beta weights in the regression equation where the variable considered as the criterion is regressed or the other variables considered as its antecedents. The path coefficient indicates the direct effect of a variable or variables taken as a cause or causes on another variable taken as the effect. By the examination of the path coefficients one can make judgements about the size of the direct effect of one variable on another, and also the size of an indirect effect through a mediating variable.

It is seen that the endogenous variables are determined both by other variables within the system and by disturbance or residual variables not contained within the system. In addition, it is assumed that the disturbance or residual variables associated with one of the variables within the system are independent of and not correlated with other variables in the system or other residuals.

The variance of an endogenous variable comprises a part which is attributable to the other variables related to it in the system and a part which is attributable to variables related to it but not contained in the system. Thus the path coefficients between the disturbance variables and a variable in the system is given by $\sqrt{1 - R^2}$.

The Examination of Multiple Criteria

Multiple regression analysis and its utilization in path analysis enables the examination of the influence of a set of predictor variables on a single criterion. However, the pattern of television viewing has many facets. In addition to calculating the number of hours viewed one can obtain information on the number of hours spent in watching separate categories of programs, specific channels and whether the viewing occurs in company or alone, during meal times, or before school. Given the multi-faceted nature of the pattern of television viewing and behaviour it is essential to examine these outcomes together rather than separately and so to produce a more parsimonious analysis of the influence of antecedent factors on television viewing patterns and behaviour. Canonical analysis is a technique which enables a researcher to examine the relationship between a set of predictor or independent variables and a set of criterion or dependent variables.

In this study it was planned to undertake three canonical correlational analyses with the variables sex, father's occupation, IQ, parental control, peer association and self esteem as the predictor set and as the criterion

variables: the hours viewed in nine program categories (news and news commentary, documentary, children's educational, religious, quiz and audience participation, sport, variety, drama, cartoons); hours viewed for each of the four channels; and the viewing behaviour variables of watching television alone, while eating the evening meal, and before school.

Canonical correlation analysis enables the drawing of conclusions about the number and nature of mutually indepedent relations between two sets of variables and the degree of overlap or redundancy between the two sets indicating the extent to which one set may be predicted from the other.

Canonical correlation analysis involves the extraction of pairs of canonical variates or linear functions of the two sets of variables, in order to maximize the correlation between the variates. The first canonical correlation is the highest correlation that can be found between the first pair of canonical variates; the second canonical correlation is the highest correlation which can be found between the second pair of canonical variates which are uncorrelated or orthogonal to the first pair. The canonical correlation coefficient between each pair of variates shows the strength of the relationship between the variates and the square of this coefficient describes the proportion of the variance of one variate predictable from the other variate. The coefficients which assist in the interpretation of the canonical variates are the transformation weights which are analogous to the standardized partial regression weights in multiple regression analysis and have traditionally been used to interpret the factors; but it is suggested that the factor structure coefficients are more meaningful (Tatsuoka, 1973; Thomson and Keeves, 1974). The structure coefficients are the correlations between each of the canonical variates in the pair and the original variables. This enables the better identification of the factor as it provides a measure of the loading of each of the component variables on the factor. Also the sum of the squared structure coefficients enables the determination of the proportion of the variances of each set of variables that is extracted by each factor.

In carrying out the canonical analysis the program CANON (Cooley and Lohnes, 1971) was used; this program provided measures of redundancy.

In the analyses reported in Chapter 6 the causal models advanced in the preceding pages have been tested using multiple regression analysis. In those analyses where several interrelated criteria have been considered canonical analysis has been regarded as the most appropriate technique to examine the interrelationships between the set of predictor variables and the set of criterion measures.

CHAPTER 4

SCOPE AND DESIGN OF THE STUDY

The general aims of this investigation were to examine television viewing patterns of Grade 6 children and to study relationships between home background variables, personal characteristics, television viewing patterns and school achievement.

The study was located in the metropolitan area of Melbourne because of the accessibility of the area to the researcher and the fact that it could be reasonably assumed that the potential exposure of the children in the sample to television would be identical. In addition the metropolitan area was served by four television channels including three commercial and one government owned, which would provide a suitable variety of programs.

The population was restricted to Grade 6 children in state primary schools. While there are other primary schools outside the government school system with substantial enrolments it was felt desirable to confine this investigation to this group. Furthermore the researcher was able to obtain ready access to current enrolment information for state primary schools which was not available for the catholic and non-catholic indepdendent schools. In addition, it is common practice for children who move into the independent non-catholic school system at the secondary level to have first attended state primary schools so that the range of backgrounds of the pupils at Grade 6 in the state primary schools would be sufficiently varied to allow investigation of this variable. Further studies on populations in other grade levels and in other systems would provide useful comparisons with the conclusions of this study.

The Sample

A sample of Grade 6 children in state primary schools was drawn in two stages. First, using 1977 enrolment information supplied by the Education Department, the Australian Council for Educational Research sampling frame and tables of random numbers, three samples of ten schools were drawn with the probability of inclusion in each sample proportional to the number of Grade 6 children in the school within the larger population. Schools with Grade 6 enrolments less than 25 were excluded; the sampling frame grouped schools first by size of enrolment and then by geographical location. Schools in the first sample of ten schools were then approached by mail and followed up by telephone to enlist their co-operation.

Two schools refused to participate and another was unable to take part because a school camp had been arranged during the period scheduled for data collection; these three schools were then replaced from the second sample by schools which were closest geographically.

The second stage of the sampling procedure involved drawing a random sample of 30 Grade 6 children across grades using class lists supplied by the schools and random number tables.

Each of the children selected in the sample was given a letter for his/her parents seeking their co-operation a few days before the scheduled date of testing and also asking parents to make sure that their children had correct information about father's occupation and parent's education. Attrition from the original sample of 30 children per school occurred as a result of parental refusal or absence on the day of testing. In total 271 children (138 boys and 133 girls) were tested which represents 90.3 per cent of the original sample of 300. Twelve children of the 271 did not return their television diary despite follow up but these were included in the analysis using missing data values for the television viewing information collected in this way. The ages of the children in the sample ranged from 10.6 to 13.4 years with a mean age of 11.6 years.

The sample of 271 represents approximately one per cent of the population. It is realized that this complex sample design (two stage cluster sample) differs from a simple random sample which is the fundamental assumption in the calculation of the sampling error in the estimating of population parameters by the usual text book formulae. Recent research (Ross, 1975) has shown that there is a danger of underestimating sampling errors when no account is taken of the design effect of a departure from simple random sampling to more complex sample designs. Techniques for the estimation of sampling errors have been developed to take into account the design effect (balanced repeated replication and jack-knifing) and these have been described by Ross. However, for this study it was decided that the adjustment was not warranted given the nature of the study and the complexity of the computation of the design effect. In addition, Ross showed that in the case of the two stage cluster sample the design effect on sampling error for correlation and standardized regression coefficients was minimal compared to more complex sample designs and of a level which could be tolerated. He found that the probability of incorrect statements about correlation and standardized regression coefficients being made when the probability level

of 0.05 was being aimed at and the design effect ignored for a two stage cluster sample was 0.09 for both coefficients; however the probability was higher for means (0.21).

Data Collection

The data for the study was collected by the administration of the following tests:

Otis Intermediate Test Form AB (Australian Council for Educational Research)

Self Esteem Inventory (Coopersmith, 1967)

Test of Comprehension, Primary School Social Studies Tests, Victorian Primary Schools Testing Programme (Australian Council for Educational Research, 1969)

The pupils also completed a questionnaire and a diary of their television viewing over seven consecutive days.

The Otis Intermediate Test Form AB is a test of general intelligence or mental ability and is designed to estimate innate ability, rather than acquired knowledge, by the use of a variety of test situations scaled in order of difficulty to obtain a representative measure of the individual's mental efficiency in general. It takes 30 minutes to complete and contains 69 questions in ascending order of difficulty and includes analogies, classifications, word meanings, proverbs, number series and questions requiring arithmetical and verbal reasoning. The test provides an estimate of the linguistic, quantitative and general learning or thinking ability of pupils from 9.0 to 14.0 years of age; the most reliable estimate is obtained at the centre of the age range. The test yields a raw score which is then converted into an IQ range using the chronological age of the pupil. For the purposes of the analyses, the IQ ranges were designated by mid-points and in cases where a + had been appendaged to the upper value of the range an addition of 3 was made to calculate the mid-point value.

The Coopersmith Self Esteem Inventory (Coopersmith, 1967) is a test designed to measure evaluative attitudes towards the self in social, academic, family and personal areas of experience. The 58 self report item scale yields a total possible score of 50 and an eight point lie scale to assess extremely socialized response sets. The total self esteem score can be categorized into subscales or self esteem in relation to home and parents, peers, school-academic and general self. It is a scale originally designed by Coopersmith for children 10 to 12 years but has been used with age ranges

from 8 years to adult and requires subjective responses to statements as to whether the statement is 'like me' or 'unlike me'. Coopersmith reports a number of American studies which support the validity of the scale (Coopersmith, 1975) and Australian studies have supported the validity of its use on Australian children (Edgar, Powell, Watkins, Moor and Zahkarov, 1974; Ross, 1974).

The test of Comprehension in Social Studies is one of a battery of tests developed by Australian Council for Educational Research for the Victorian Primary Testing Programs (1969-1970). It is a test purporting to measure developed abilities in the content of material typical of that encountered in social studies. 'The abilities covered under the general heading of comprehension include understanding of the explicit and implicit meaning of information given. The understanding of implications involves the abilities of recognizing connotations and deducing necessary or likely consequences or associations' (Reneham and Wilkes, 1973). It is a content free test of 52 items involving material presented verbally, graphically and pictorially and requiring similar skills to those which might reasonably be expected to be required in comprehending news, news commentary and documentary television programs. The Coopersmith and Otis IQ tests were administered according to the instructions contained within the appropriate manuals. However for the Comprehension in Social Studies test it was necessary to fabricate administration instructions because the original instructions could not be located.

The student questionnaire provided information about age, sex, family size, father's occupation, father's and mother's education, access to television and viewing habits including information about the extent to which parents were aware of the programs watched by their children and the hours watched over the previous week as recalled by the child. The questionnaire was trialled on a single class in a school not selected in the sample. As a result of the trial modification was made to the questions on father's occupation and parental control of television viewing.

The occupation of the father was classified on sixteen and six point scales in the manner suggested by Broom, Jones and Zubrzycki (1965, 1968) and Broom and Jones (1969). This classification is based on grouping occupations of the same or similar skill and ordered to form an occupational prestige scale in accordance generally with the findings on occupational prestige in Australia (Congalton, 1963). The scale has been shown to be as an effective predictor of subjective social class in Australia as either income or education with the zero order correlations between subjective

social class and occupation, income and education of 0.36, 0.37 and 0.35 respectively (Broom, Jones and Zubrzycki, 1968).

The teacher questionnaire provided information on student achievement and social development. The classroom teacher was asked to rate each student in the sample on a ten point scale for overall student achievement and peer group social development respectively and on a five point scale as to whether each student was achieving up to potential.

The testing and administration of the questionnaires were carried out by the researcher in each of the ten schools during a three hour session in the mornings of the two weeks ended July 20, 1977. The order of administration during the testing period was as follows: (1) Coopersmith Self Esteem Inventory (2) Otis IQ Intermediate Test (3) Questionnaire (4) Social Studies Comprehension Test. The morning play break occurred during the completion of the student questionnaire.

Schramm, Lyle and Parker (1961) discuss and compare different methods for collecting information on viewing time and point out that the different methods produce different estimates of a child's television viewing time. The methods discussed include estimates by parents, estimates by the child of viewing over some past period, supervised and unsupervised diaries, recall aided or unaided of programs viewed on the previous day. Schramm, Lyle and Parker express faith in the aided recall of programs viewed on the previous day method but suggest that the supervised diary should have the virtues of an aided recall interview.

The validity of the questionnaire and television diary techniques was also questioned and examined by Brechtel, Achelpohl and Akers (1972). By using direct observation of behaviour, utilizing video equipment installed in the subject's home, they report that questionnaires and diaries generally over report viewing time, a tendency which ranges from about 25 per cent over reporting in a diary to a 40 to 50 per cent over reporting in estimates of viewing time for the previous day and general estimates of an average day's viewing.

Another problem which has important implications for the estimation of television viewing time, is the level of attention which children give while watching the television set. Most viewing is done in the company of others and a variety of activities are involved in while viewing - conversing, eating, reading, studying, playing. For a considerable amount of the time, the television set is turned on little, if any, attention is being paid to the program

(Allen, 1965; Murray, 1972), so that viewing becomes a secondary activity, a situation which may comprise about 30 per cent of viewing time (Robinson, 1969). Lyle and Hoffman (1972) report that fewer than 20 per cent of first graders said they never did other things while watching television and about 50 per cent of older students said they sometimes study while the set is on; a high frequency of discussion with parents and siblings was reported the major part of which related to program content but also ranged over other topics.

Given the nature and scope of the inquiry it was not possible to use the sophisticated, hard-ware-intensive, direct observational techniques advocated by Brechtel, Achelpohl and Akers (1972) or to extend the questionnaire to survey other activities engaged in while viewing television. Television viewing time was collected in two ways: by a diary kept over the period of seven days from Saturday, July 30 to Friday, August 5 issued, supervised and collected by the class teacher; and by an estimation via the questionnaire of the hours viewed over the previous week. Provision was made to allow the children to indicate the three programs which they most enjoyed and to indicate them in order of preference. The time viewed as collected by the diary was categorized by program type and by channel The categories of program type used were as follows:

1 News and News Commentary
2 Documentary
3 Children's Educational
4 Religious
5 Quiz and Audience Participation
6 Sport
7 Variety
8 Drama
9 Cartoons

The program categories are listed in order in terms of a reality to fantasy spectrum. It is realized that the categorization of the programs and the viewing time are somewhat subjective and arbitrary and that the basis of the division between reality and fantasy is very much a perception of the viewer which will differ between individuals and for an individual from time to time. However, the distinction has foundation in other research. Schramm, Lyle and Parker (1961) set down criteria for the classification which was also used by Furu (1971) in his detailed survey of Japanese children's television viewing habits.

According to Schramm, Lyle and Parker (1961)

> fantasy content: invites the viewer to take leave of his problems in the real world; invites surrender, relaxation, passivity; invites emotion; works chiefly through abrogating the rules of the real world; acts to remove, at least temporarily, threat and anxiety, and often offers wish-fulfillment; offers pleasure; whereas reality content: constantly refers the viewer to the problems of the real world; invites alertness, effort, activity; invites cognition; works chiefly through realistic materials and situations; tends to make viewer even more aware of threat, perhaps more anxious, in return for better view of problem; offers enlightenment. (Schramm, Lyle and Parker, 1961: 63-64)

Key Variables and Their Measurement

Table 4.1 below shows the major variables of the study and summarizes the method used for the measurement of those variables. The information has been presented in this way to enable the reader to follow more effectively the presentation of the analysis of the data and the results of the investigation.

Table 4.1 Variables and Their Measurement

	Variables	Measurement
1	Home Variables	
	Father's Occupation	Children's response on questionnaire classified on 16 point scale (Broom, Jones and Zubrzycki, 1968) 16 Highest status occupations 1 Lowest status occupations
	Father's Education Mother's Education	Children's response on questionnaire categorized on a five year interval scale.
	Number of TV Sets in the Home	
	Colour TV in the Home	Children's response on questionnaire
	Parental Control of Television Viewing	Children's response to question on questionnaire: Do your parents know which program you watch? Always 5 Most times 4 Sometimes 3 Almost Never 2 Never 1

	Variables	Measurement
2	Personal Characteristics	
	Sex	Children's response on questionnaire 1 Boy 2 Girl
	IQ	Administration of the Otis Intermediate Test Form AB
	Self Esteem	Administration of the Coopersmith Self Esteem Inventory (Coopersmith, 1967) yielding a total score and subscales of self esteem in relation to: home-parents, peers, school-academic, general self.
	Peer Group Association	Teacher rating on a 10 point scale 1 Low 10 High
3	Television Viewing Variables	
	Time Devoted to Television Viewing	1 Children's response on questionnaire categorized on a 10 hour interval scale. 2 Completion over a seven day period of a TV viewing diary.
	Time Devoted to Television Viewing - Time Viewed by Program Category - Time Viewed by Channel	Completion over a seven day period of a TV viewing diary.
	Preferred Programs	Question attached to TV viewing diary asking the children to indicate the three programs most enjoyed in order of preference.
	Watching Television Alone Watching Television Before School Watching Television While Eating	Children's response on questionnaire Questions: Do you watch TV alone? How often do you watch TV before leaving for school? Do you watch TV while eating your evening meal? Response: Always 5 Most Times 4 Sometimes 3 Almost Never 2 Never 1

	Variables	Measurement
4	Achievement Variables	
	Social Studies Comprehension	Administration of Test of Comprehension in Social Studies. (Victorian Primary Schools Testing Program ACER 1969-1970).
	Overall School Achievement	Teacher rating on a 10 point scale 1 Low 10 High
	Over/Under Achievement	Teacher rating on a 5 point scale. 1 Grossly under achieving 2 Under achieving 3 Achieving up to potential 4 Over achieving 5 Grossly over achieving

CHAPTER 5

THE PATTERN OF TELEVISION VIEWING

The purposes of the study were to examine the television viewing pattern and behaviour of Grade 6 state primary school children in the Melbourne metropolitan area, to articulate factors determining the pattern and to examine the relationship between television viewing and school performance. The data for the study were collected by tests, teacher and pupil questionnaires and by the completion by the children of a diary of television viewing. In this way, information was gained on aspects of home background, personal characteristics, television viewing habits and school performance. Causal path models of the relationships between selected variables within these groups were hypothesised and were subjected to empirical testing. This chapter provides the results of the examination of the television viewing pattern and presents relationships of interest as a result of the bivariate correlational analysis of the data. It should be pointed out that in the reporting and discussion of these results causality is not implied.

Accessibility to Television

Children in the sample had ready access to television. Only one child came from a family which did not own a television set and 63 per cent of the children came from homes with more than one set; 59 per cent of the children reported that there was a colour set in their homes. The figure reported for the penetration of colour would seem consistent with the most recent audience survey (McNair Anderson Associates, 1977) who reported 60 per cent level for Melbourne homes with colour television. However the figure for multiple television set homes was much larger for the children in the study than that reported by the McNair Anderson study (25 per cent).

The study sought to gain information about parental control of the access of children to the television set. Forty-three per cent of the children reported that there were programs which they would have liked to watch during the survey week but were not allowed to watch and 75 per cent reported that their parents 'always' or 'most times' knew the programs that they watched with only five per cent indicating that their parents 'almost never' or 'never' knew the programs that they watched. It would seem therefore that the children felt that their parents exercised some control over their viewing.

Hours Viewed

Information relating to hours of viewing was collected in two ways. Children were asked on the questionnaire to estimate the number of hours spent watching television over the past week and to indicate their response in six categories. The results are given in Table 5.1 and presented graphically in Figure 5.1.

It should be pointed out that the period of viewing which was the basis for this information would not be common for all children in the sample as the time of administration of the questionnaire differed for schools; however it could be assumed that the week on which the estimates were made during the month of July for all children.

Information about hours viewed was also collected by the completion of a television viewing diary over a week common to all children in the sample. The hours of viewing obtained from the television diary are given in Table 5.2 and presented graphically in Figure 5.2.

It will be noted that the mean hours viewed differed between the methods used for collection of the data. The mean for viewing time as indicated in the questionnaire was 26.5 hours while the mean for the viewing time as collected by the supervised diary method was 28.3. The correlation coefficient between the two methods was 0.49.

As indicated in Chapter 4 above the methods of collection of information about hours viewed would appear to produce differing estimates of viewing time. Schramm, Lyle and Parker (1971) suggested that the supervised viewing diary produced more reliable estimates than the general estimate of the child and reported in their studies a consistent viewing time by supervised diary less than the general estimate, a relationship which would seem not to be supported by this study. However, the finding of this study that the general estimate was less than the supervised diary could in part be accounted for by the lack of congruence of the periods of measurement and more importantly by the way in which the general estimate was obtained. Children were asked to categorize the hours viewed into six categories the last of which was 'greater than 40 hours' and in the calculation of the mean, this category, which contains 17 per cent of the children, was allocated a value of 45.5 hours. It is apparent from the diary estimates that this value severely underestimated the appropriate value for the over 40 hours category. A recoding of the data on television viewing time collected by the diary method using the same class intervals as the general estimate produced a mean viewing

Table 5.1 Hours Viewed Per Week (Questionnaire)

Hours Viewed	Relative Frequency Per Cent
0	0.4
1 to 10 hours	9.3
11 to 21 hours	25.3
21 to 30 hours	27.1
31 to 40 hours	20.8
More than 40 hours	17.1
Total	100.0

N = 269 Mean = 26.5 SD = 12.4 Median = 26.0

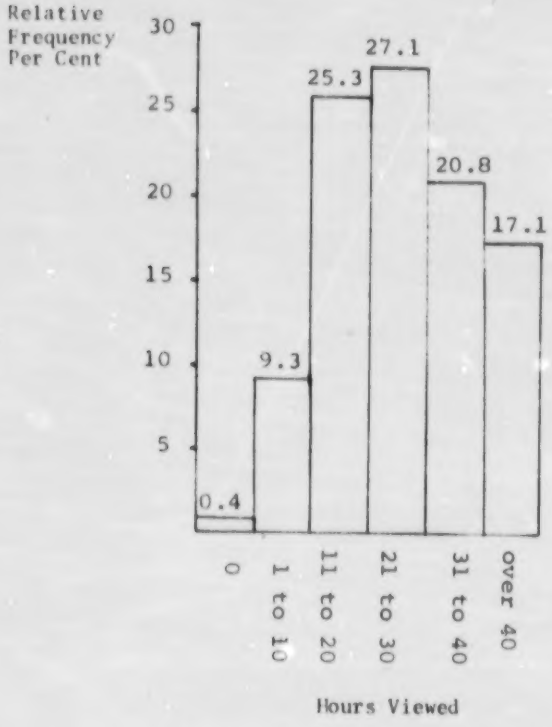

Figure 5.1 Hours Viewed Per Week (Questionnaire)

Table 5.2 Hours Viewed Per Week (Television Viewing Diary)

Hours Viewed	Relative Frequency Per Cent	Hours Viewed	Relative Frequency Per Cent
0	0		
0.1 to 3.9	0.4	40 to 43.9	5.0
4 to 7.9	0.8	44 to 47.9	5.8
8 to 11.9	5.8	48 to 51.9	2.7
12 to 15.9	8.9	52 to 55.9	1.2
16 to 19.9	10.4	56 to 59.9	1.5
20 to 23.9	13.1	60 to 63.9	0.4
24 to 27.9	17.0	64 to 67.9	0.4
28 to 31.9	10.8	68 to 71.9	
32 to 35.9	8.5	72 to 75.9	
36 to 39.9	6.9	76 to 79.9	0.4
		Total	100.0

N = 259 Mean = 28.3 SD = 12.4 Median = 26.5

time of 27.1 hours for the diary method which was found not to be significantly different from the mean of 26.5 obtained for the general estimate. In the remaining part of the presentation of results it is the diary viewing times which will be the estimates relied upon.

The estimates of viewing time found in this study confirmed the substantial amount of time which children devoted to the medium. Only 26 per cent of the children viewed less than 20 hours and 25 per cent viewed more than 40 hours in the week. The mean estimate of 28.3 hours per week appeared to be higher than estimates obtained in the other recent Australian studies on similar age groups, although one must be careful in making comparisons across studies because of the different instruments used and different times of measurement. Powell (1971) found a mean of 3 hours 40 minutes per week day for Melbourne 13 year olds; Thomas and Lang (1966) found a mean of 23.9 hours per week for (boys) and 22.2 per week (girls) in Form 1 in Geelong schools and Tindall and Reid (1975) found a weekly mean of 21.6 hours for Sydney children in the 10 to 12 years age group.

It is suggested that data obtained for the amount of television viewed should be reasonably accurate given the way in which the estimates were

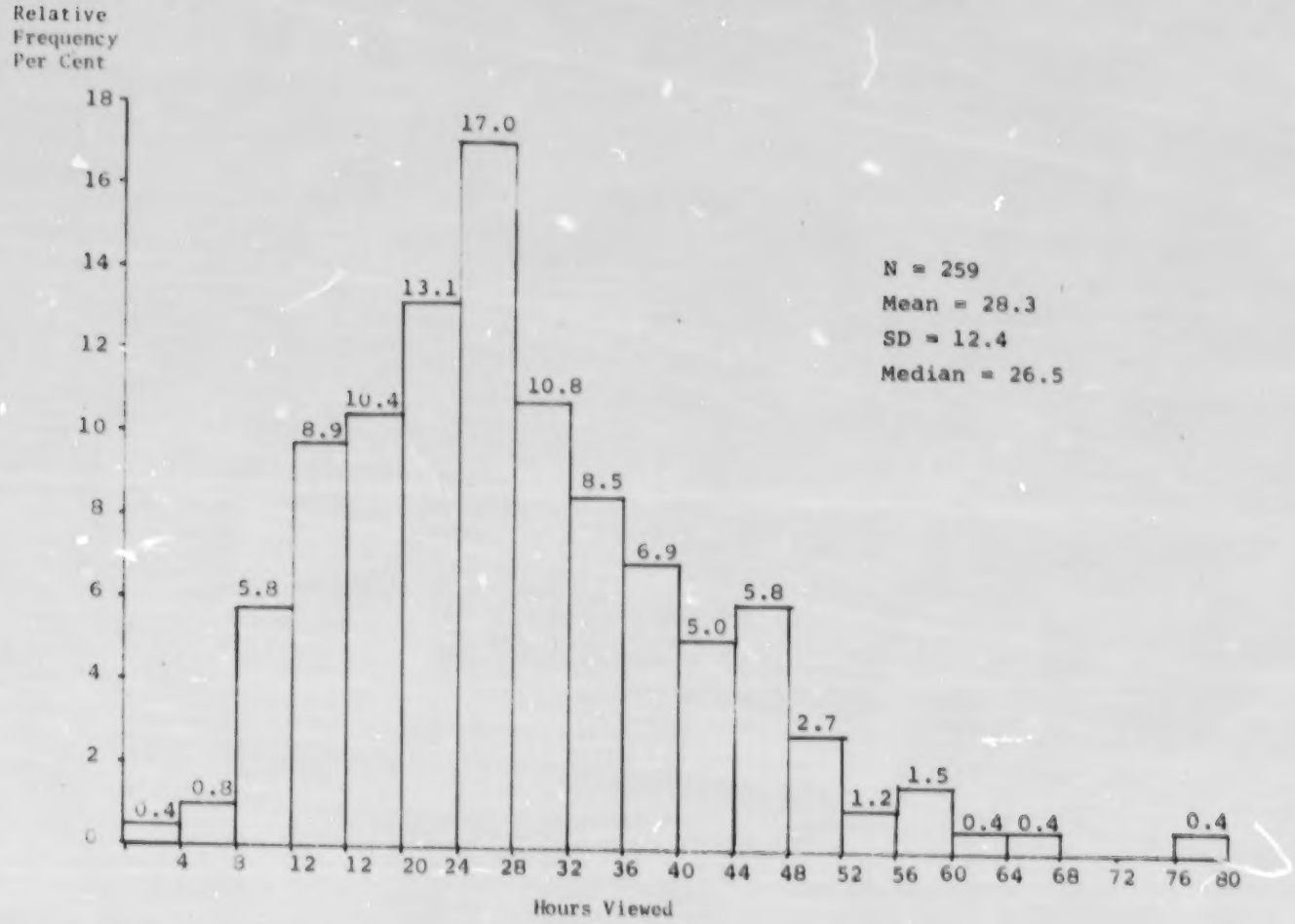

Figure 5.2 Hours Viewed Per Week (Television Viewing Diary)

obtained. The children were asked to indicate the programs viewed by shading in the appropriate time block in the diary and to shade only part of the block if only part of the program was viewed. Each diary was then analyzed by the researcher to produce estimates of total time viewed, time viewed for each channel and time viewed for each program category.

Channels Viewed

The television viewing diary enabled the categorization of total viewing time by channel viewed. The results obtained are given in Table 5.3.

The data revealed a marked popularity for the commercial channels (ATV0, HSV7, GTV9) and an aversion to the Australian Broadcasting Commission channel (ABV2). During the week of viewing 30 per cent of the children indicated that they did not view any program on Channel 2 while the comparable figure for each of the commercial channels was two per cent, four per cent and two per cent for Channels 0, 7 and 9 respectively.

Table 5.3 Hours Viewed for Each Channel

Hours Viewed	Relative Frequency Per Cent			
	Channel			
N = 259	ATV0	ABV2	HSV7	GTV9
0	1.9	30.1	3.5	1.9
1 to 3.9	17.4	62.9	28.6	15.4
4 to 7.9	26.6	5.4	34.7	27.0
8 to 11.9	23.2	1.2	21.2	20.8
12 to 15.9	16.2	0.4	8.5	17.4
16 to 19.9	6.2		2.3	7.7
20 to 23.9	3.5		0.8	5.8
24 to 27.9	1.9		0.4	1.9
28 to 31.9	1.9			1.2
32 to 35.9	0.8			
36 to 39.9	0.4			0.8
	100.0	100.0	100.0	100.0
Mean	9.9	1.7	6.6	10.2
SD	7.0	1.8	4.6	6.9
Median	8.7	1.9	6.1	9.0

Programs Viewed

Total hours viewed were categorized into nine program categories. Table 5.4 presents the details of hours viewed in each of the program categories.

The children were also asked to indicate the three programs most enjoyed over the week that they recorded their viewing in the diary. Those programs which were mentioned by at least five per cent of the children are given in Table 5.5 which also shows the popular programs by sex.

An examination of the tables reveals the overwhelming popularity of programs which had as their main purpose the entertainment of the viewer and confirmed the suggestion that children saw television's function as providing entertainment rather than information or educational experiences. In addition, in terms of the fantasy-reality orientated distinction, the content of the favourite or more viewed programs, would cluster very heavily at the fantasy end of the spectrum. Twenty-two per cent of the children did not watch any news or news commentary program. 62 per cent did not watch a documentary type program and 51 per cent did not watch any children's educational type program. No documentary or children's educational program was rated by greater than 5 per cent of the children in the three programs most enjoyed.

Other Aspects of Television Viewing Behaviour

The children were asked for responses to questions on some specific aspects of their television behaviour and to indicate their response on a five point scale.

Do you watch TV alone?
How often do you watch TV before leaving for school?
Do you watch TV while eating your evening meal?

Always	☐ 5
Most Times	☐ 4
Sometimes	☐ 3
Almost Never	☐ 2
Never	☐ 1

The results of the responses to the three questions are given in Table 5.6 and Figure 5.3.

Table 5.4 Hours Viewed for Each Program Category

Hours Viewed N = 259	Relative Frequency Per Cent								
	News	Documentary	Children's Educational	Religious	Quiz Audience Participation	Sport	Variety	Drama	Cartoons
0	21.6	62.2	51.4	88.8	20.1	36.7	4.2	0	15.8
0.1 to 3.9	72.6	37.8	47.1	11.2	69.5	42.5	63.7	4.6	45.9
4 to 7.9	5.8		1.5		10.4	11.2	30.1	13.9	24.8
8 to 11.9						8.1	1.5	22.0	9.7
12 to 15.9						1.2	0.4	23.9	3.9
16 to 19.9						0.4		17.4	
20 to 23.9								11.2	
24 to 27.9								2.7	0.4
28 to 31.9								3.5	
32 to 35.9								0.8	
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean	1.6	0.3	0.7	0.1	1.7	2.4	3.5	14.1	3.9
SD	1.5	0.6	1.0	0.2	1.6	3.5	2.2	6.6	3.9

Table 5.5 Favourite Programs

Program	Program Category	All Children		Boys		Girls	
		N = 258		N = 130		N = 128	
		No.	Per Cent	No.	Per Cent	No.	Per Cent
Battle of the Network Stars	Variety	42	16	23	18	19	15
Sullivans	Drama	37	14	11	9	26	20
Bankerty Blanks	Quiz Audience Participation	33	13	17	13	16	13
Little House on the Prairie	Drama	33	13			27	21
Brady Bunch Variety Hour	Variety	33	13	7	5	26	20
Happy Days	Drama	33	13	16	12	17	13
Wonder Woman	Drama	32	12	9	7	23	18
Movie-Cleopatra Jones	Drama	31	12	18	14	13	10
Brady Bunch	Drama	29	11	7	5	22	17
Amco Herald Football Grand Final	Sport	23	9	19	15		
Young Doctors	Drama	22	9			18	14
Movie-West World	Drama	22	9	14	11	8	6
Muppets	Variety	20	8	8	6	12	9
Get Smart	Drama	17	7	10	8	7	6
Lost in Space	Drama	15	6	7	5	8	6
Countdown	Variety	14	5			11	9
Baa Baa Black Sheep	Drama	14	5	13	10		
Hogan's Heroes	Drama			11	9		
Cricket Test	Sport			11	9		
Flintstones	Cartoons			9	7		
Movie-Fantastic Voyage	Drama			9	7		
Move-Sink the Bismark	Drama			8	6		
Mash	Drama			7	5		
Starsky and Hutch	Drama			7	5		
Six Million Dollar Man	Drama			7	5		

Table 5.6 Responses to Questions on Aspects of Television Viewing Behaviour

Question	Relative Frequency Per Cent				
N = 271	Always	Most Times	Some-times	Almost Never	Never
Do you watch TV alone?	1.5	7.0	60.5	25.8	5.2
How often do you watch TV before leaving for school?	20.7	11.4	21.4	10.3	36.2
Do you watch your TV while eating your evening meal?	20.3	22.1	31.7	12.9	12.9

Apparently watching television before school was not an unusual activity; about 32 per cent watched television 'most times' or 'always' before school, but on the other hand 36 per cent indicated they 'never' watched television before school. Television with the evening meal was also not uncommon with 42 per cent 'always' or 'most times' engaging in this activity. Television viewing tended to be an activity undertaken in the company of others; only nine per cent of the children indicated that they 'always' or 'most times' watched television alone.

Sex Differences and Television Viewing

The variables associated with television viewing were analysed for differences related to sex using a simple one way analysis of variance. The results are given in Table 5.7.

No differences were found between boys and girls in the amount of time devoted to television but there appeared to be clear differences in type of programs and channels watched and in other aspects of television behaviour. It would seem that boys watched more documentary, sports and cartoon programs than girls, while girls watched more children's educational and variety programs than boys. Boys tended to watch more of Channel 7 than girls which probably reflects the substantial quantity of sports programs on this channel. Boys tended to watch more before school and more alone than girls.

A visual comparison of the favourite programs of boys and girls shown in Table 5.5 reveals some points of note. Girls seemed to prefer family

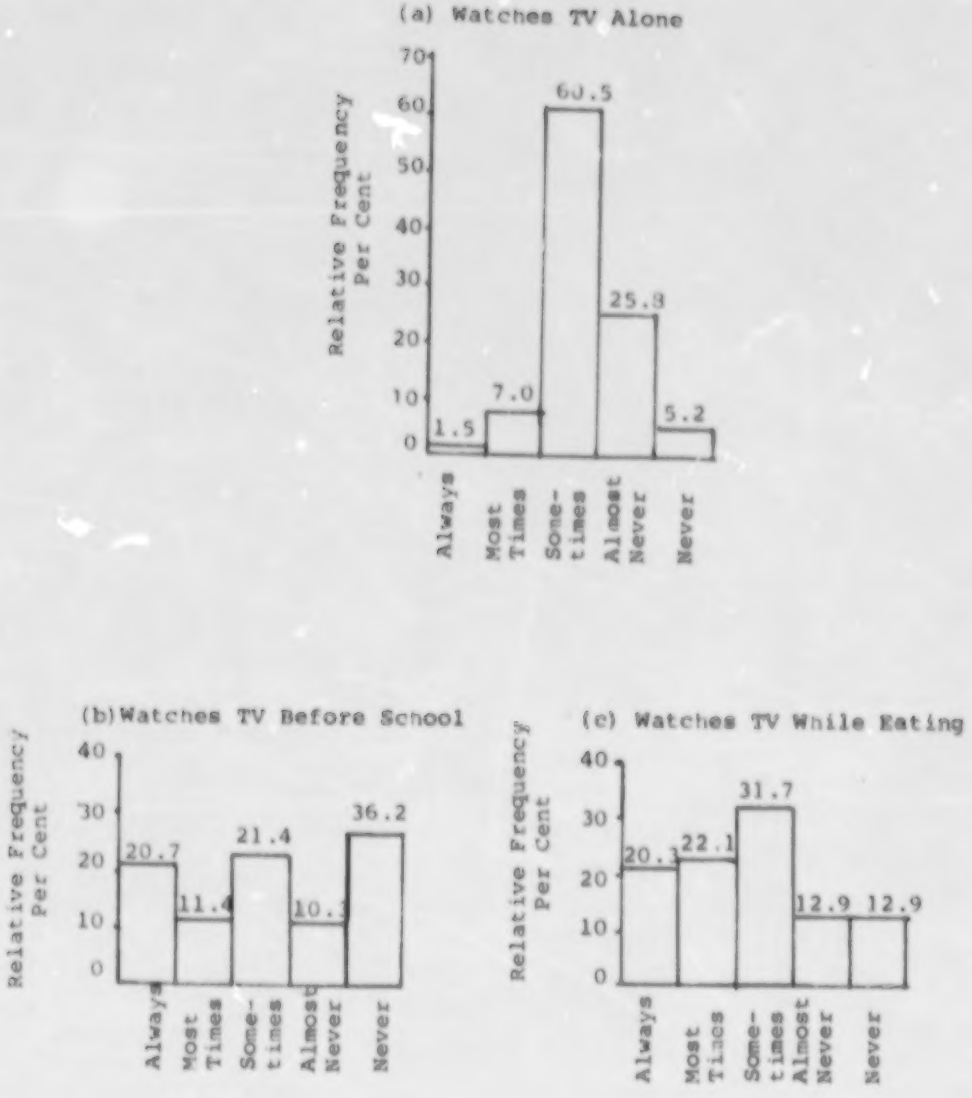

Figure 5.3 Responses to Questions on Aspects of Television Viewing Behaviour

Table 5.7 Sex Differences and Television Viewing Behaviour

Variable	Boys N = 131 - 138 Mean	Boys SD	Girls N = 128 - 133 Mean	Girls SD	F Ratio	Significance Level P
Hours Viewed - Questionnaire	29.6	12.8	25.5	11.9	1.9	NS
Hours Viewed - Diary	29.4	12.2	27.4	11.7	1.8	NS
News	1.7	1.5	1.5	1.4	0.9	NS
Documentary	0.4	0.7	0.2	0.4	8.4	<0.01
Children's Educational	0.4	0.8	1.0	1.2	19.5	<0.001
Religious	0.1	0.2	0.1	0.3	2.6	NS
Quiz, Audience Participation	1.8	1.7	1.7	1.5	0.5	NS
Sport	3.7	3.0	1.2	2.0	41.6	<0.001
Variety	3.0	2.2	3.8	2.1	8.9	<0.01
Drama	13.6	6.2	14.7	7.0	2.0	NS
Cartoons	4.8	4.2	3.2	3.3	10.8	<0.001
ATV0	10.1	7.0	9.8	6.8	0.1	NS
ABV2	1.8	1.7	1.5	2.0	0.5	NS
HSV7	7.7	5.1	5.6	3.9	13.3	<0.001
GTV9	10.0	7.0	10.4	6.7	0.0	NS
TV Before School	2.9	1.6	2.5	1.5	5.0	<0.05
TV While Eating	3.3	1.3	3.2	1.2	0.9	NS
TV Alone	2.9	0.7	2.6	0.7	7.5	<0.01

situation type and variety type programs with a heavy dominance of female characters while sports type and adventure programs dominated the boys' preference. This point being well illustrated by the fact that the girls' favourite program 'Little House on the Prairie' which was mentioned by 21 per cent of girls was mentioned by less than five per cent of the boys.

Factors Influencing Television Viewing

Data were collected on aspects of the home background and personal characteristics of children which were hypothesised to be associated with television viewing behaviour of children. Pearson's product-moment correlation coefficients were calculated.

Home Background and Television Viewing

Table 5.8 gives the correlation coefficients between the home background variables, Table 5.9 shows the correlation coefficients between the television viewing variables and Table 5.10 shows the correlation coefficients between home background variables and television viewing variables. Only correlations which reached the five per cent level of significance are shown.

The majority of the correlation coeeficients between the home background variables were significantly greater than zero at the five per cent level. As would be expected, fathers in higher status occupations tended to be better educated and have better educated wives. Homes where the father was better educated had more children.

Higher status homes tended to exercise greater parental control over children's viewing as evidenced by the correlations between father's occupation and education and parental control but surprisingly mother's education did not appear to be related to parental control. Multiple set homes tended to be those with colour television but the existence of more than one set in the home seemed not to be related to father's occupation or both mother's and father's education. It would seem that families who purchased a colour set kept the black and white set as the second set. No information was collected to establish whether this second set became the children's set, but it would appear that larger families were more likely to have more than one set. There was no difference in parental control in multiple set homes although there was a tendency for more control to be experienced in homes with colour television. Homes where the parents were better educated were more likely to have a colour television set.

Table 5.8 Correlations Between Home Background Variables[a]

N = 259	2	3	4	5	6	7
1 Father's Occupation	0.50	0.41	*	*	*	0.12
2 Father's Education		0.56	0.17	*	0.10	0.12
3 Mother's Education			*	*	0.14	*
4 Children in Family				0.12	*	*
5 Number of TV Sets					0.33	*
6 Colour TV						0.10
7 Parental Control						-

a Only correlations with $P<0.05$ are given

An examination of the correlations between the television viewing variables in Table 5.9 reveals several points of note. Heavy viewing was associated with viewing across all program categories except documentary and heaving viewing was particularly associated with drama type programs and cartoons and the commercial channels. Heaving viewing was also associated with viewing before school, while eating and alone.

Table 5.10 shows the correlations between home background variables as predictors and television viewing variables as criteria. The major home background variables which were related to total viewing time were father's occupation and education, mother's education and level of parental control. Children of fathers with high status occupations watched less television as did children whose fathers and/or mothers were better educated. Children of parents who exercised control over their children's viewing watched less television; this relationship seemed to apply across the program categories. Children of fathers who were better educated seemed to watch more documentary programs but less of most other categories. The watching of Channel 0 and 9 appeared to be negatively related to the status of the family while children of fathers in high status occupations watched more of Channel 2. Watching television before school and alone occurred more in homes of low occupational and educational status of the father. Low parental control seemed to be associated with watching television alone.

Personal Characteristics and Television Viewing

Table 5.11 gives the correlation coefficients between the personal characteristics of the children in the sample.

Table 5.9 Correlations Between Television Viewing Variables[a]

N = 259 - 271	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1 Total Viewing Time	0.28	*	0.35	0.37	0.50	0.41	0.56	0.83	0.64	0.70	0.16	0.44	0.71	0.36	0.26	0.21
2 News		0.22	*	*	-0.19	*	*	0.20	*	*	*	0.39	0.30	*	*	*
3 Documentary			*	*	*	*	*	*	*	-0.10	0.38	0.11	-0.11	0.11	*	*
4 Children's Educational				0.28	0.16	*	0.24	0.31	0.11	0.25	*	0.14	0.23	*	*	*
5 Religious					0.14	*	0.27	0.32	0.22	0.34	*	*	0.21	0.13	*	*
6 Quiz Audience Participation						0.16	0.30	0.36	0.27	0.63	0.10	*	0.19	0.30	0.15	0.15
7 Sport							0.10	*	0.22	*	0.18	0.48	0.30	0.14	*	*
8 Variety								0.41	0.21	0.48	0.27	*	0.36	0.25	0.17	*
9 Drama									0.32	0.70	*	0.29	0.58	0.15	0.20	0.24
10 Cartoons										0.38	*	0.30	0.55	0.50	0.22	0.17
11 ATV0											*	*	0.20	0.32	0.22	0.16
12 ABV2												*	*	*	*	*
13 HSV7													0.11	*	0.12	0.18
14 GTV9														0.28	0.12	0.12
15 TV Before School															0.25	0.18
16 TV While Eating																0.14
17 TV Watched Alone																-

a Only correlations with $P<0.05$ are given

Table 5.10 Correlations Between Predictor and Criteria[a]

N = 259-271	Father's Occupation	Father's Education	Mother's Education	Children in Family	Number of TV Sets	Colour TV	Parental Control
Total Viewing Time	-0.29	-0.27	-0.23	*	*	*	-0.26
News	*	-0.13	-0.13	*	*	*	*
Documentary	*	0.12	*	*	*	*	*
Children's Educational	*	*	*	*	*	*	*
Religious	-0.14	-0.15	*	*	*	*	-0.15
Quiz Audience Participation	-0.24	-0.17	*	*	*	*	-0.17
Sports	-0.11	-0.12	-0.12	*	*	*	-0.11
Variety	*	*	*	*	*	*	-0.11
Drama	-0.23	-0.25	-0.22	*	*	*	-0.17
Cartoons	-0.24	-0.20	-0.11	-0.13	*	*	-0.27
ATV0	-0.33	-0.27	-0.21	*	*	0.12	-0.26
ABV2	0.12	*	*	*	*	*	*
HSV7	*	*	*	*	*	*	*
GTV9	-0.18	-0.18	-0.14	*	*	*	-0.17
TV Before School	-0.14	-0.18	*	*	0.10	*	*
TV While Eating	*	*	*	*	0.10	*	*
TV Alone	-0.10	-0.14	*	-0.12	0.13	*	-0.14

a Only Correlations with $P<0.05$ are given

Table 5.11 Correlations Between Personal Characteristics[a]

N = 271	2	3	4	5	6	7	8
1 Sex	*	*	*	*	*	*	*
2 IQ		0.35	0.30	0.22	0.32	0.39	0.33
3 General Self Esteem			0.55	0.57	0.49	0.92	0.27
4 Parental Self Esteem				0.36	0.34	0.71	0.21
5 Peer Self Esteem					0.39	0.72	0.39
6 School Self Esteem						0.66	0.25
7 Total Self Esteem							0.35
8 Peer Association							-

a Only correlations with $P<0.05$ are given

Sex was not correlated with any of the other variables and as would be expected reasonably high correlations existed between the variables other than sex, that is, intelligence, self esteem and getting on with peers varied together.

Table 5.12 shows correlation coefficients between personal characteristics as predictors of television viewing and television viewing variables. Sex was not correlated with total hours veiwed but the table shows sex as a variable correlated with the time viewed in the different program categories except news, religious, quiz and audience participation, and drama, confirming the conclusions of the analysis of variance reported in Table 5.7. IQ and total viewing time were associated; less intelligent children tended to view more in total and more of each of the program categories except documentary and children's educational for which there appeared no relationship with intelligence. The more intelligent children viewed less of Channels 0 and 9 and viewed less before school and alone. Boys tended to view before school and alone more than girls. It appeared that self esteem had little relation with television viewing except a slight tendency for children of lower self esteem, particularly in relation to parents and peers, to have viewed more cartoons. Children with low self esteem in relation to school viewed more before school. Getting on with peers seemed to vary positively with the watching of sports programs but had no significant relationship to total viewing, choice of channel or the other aspects of television behaviour measured in this study.

Table 5.12 Correlations Between Predictors and Criteria[a]

	Sex	IQ	General Self Esteem	Parental Self Esteem	Peer Self Esteem	School Self Esteem	Total Self Esteem	Peer Association
Total Viewing Time	*	-0.30	*	*	*	*	*	*
News	*	-0.13	*	*	*	*	*	*
Documentary	-0.18	*	*	*	*	*	*	*
Children's Educational	0.27	*	*	*	*	*	*	*
Religious	*	-0.16	*	*	*	*	*	*
Quiz Audience Participation	*	-0.12	*	*	*	*	*	*
Sport	-0.37	*	*	*	*	*	*	0.19
Variety	0.18	-0.16	*	*	*	*	*	*
Drama	*	-0.31	*	*	*	*	*	*
Cartoons	-0.20	-0.21	*	-0.12	*	*	-0.11	*
ATV0	*	-0.32	*	-0.11	*	*	*	*
ABV2	*	*	*	*	*	*	*	*
HSV7	-0.16	*	*	*	*	*	*	*
GTV9	*	-0.17	*	*	*	*	*	*
TV Before School	-0.13	-0.16	*	*	*	-0.12	*	*
TV While Eating	*	*	*	*	*	*	*	*
TV Alone	-0.16	-0.11	*	*	*	*	*	*

a Only Correlations with $P \leq 0.05$ are given

Television Viewing and School Performance

Information on school performance was collected in three ways: a test of comprehension in social studies was administered to all children and teachers were asked to rate overall school performance on a 10-point scale and whether the child was achieving to potential on a five point scale. The correlation coefficients between the school performance variables are given in Table 5.13.

Table 5.13 Correlations Between Measures of School Performance[a]

N = 271		2	3
1	School Achievement (Teacher Assessment)	0.55	0.50
2	Comprehension in Social Studies		0.30
3	Over/Under Achievement		-

a Only correlations with $P<0.05$ are given

Table 5.14 shows the correlation coefficients between home background factors, personal characteristics and television viewing variables as predictors of school performance and school performance variables.

As would be expected the home background variables and personal characteristics produced moderate to high correlations with the performance variables of comprehension in social studies and teacher assessment of overall school performance and these were in the anticipated direction. Home background appeared not to influence teacher assessment of over or under achievement, but girls, more intelligent children, children with high self esteem and children who get on well with their peers seemed to be more likely to be rated by teachers as over achievers. On the basis of simple correlations heavy viewers of television appeared to do less well at school both in terms of overall performance as rated by teachers and relation to comprehension in social studies. Children who were rated by teachers as doing well at school watched more news, drama and cartoon programs and more of Channel 0. Children who performed less well on the test of comprehension in social studies watched more religious, quiz and audience participation, drama and cartoon programs. No significant relationships were found between teacher assessment of over/under achievement and television viewing. Children who performed better at school tended not to be those children who watched television before school.

Table 5.14 - Correlations Between Predictors and Criteria[a]

N = 259 - 271	School Achievement (Teacher Assessment)	Comprehension in Social Studies	Over/Under Achievement (Teacher Assessment)
Home Background Variables			
Father's Occupation	0.21	0.26	*
Father's Education	0.15	0.26	*
Mother's Education	0.19	0.24	*
Children in Family	*	*	*
Number of TV Sets	*	*	*
Colour TV	*	0.15	*
Parental Control	0.17	*	*
Personal Characteristics			
Sex	*	*	0.19
IQ	0.69	0.76	0.40
General Self Esteem	0.43	0.29	0.16
Parental Self Esteem	0.36	0.23	0.23
Peer Self Esteem	0.28	0.23	0.12
School Self Esteem	0.43	0.30	0.26
Total Self Esteem	0.49	0.33	0.23
Peer Association	0.51	0.27	0.28
Television Viewing			
Total Viewing Time	-0.20	-0.16	*
News	-0.12	*	*
Documentary	*	*	*
Children's Educational	*	*	*
Religious	*	-0.14	*
Quiz Audience Participation	*	-0.15	*
Sport	*	*	*
Variety	*	*	*
Drama	-0.19	-0.14	*
Cartoons	-0.16	-0.14	*
ATV0	-0.18	-0.21	*
ABV2	*	*	*
HSV7	*	*	*
GTV9	*	*	*
TV Before School	-0.13	-0.14	-0.14
TV While Eating	*	*	*
TV Alone	*	*	*

a Only correlations with $P<0.05$ are given

Summary

All the children except one in this study had ready access to television in the home. The mean weekly viewing time was found to be approximately 28 hours but there was considerable range in viewing time; approximately one quarter of the children viewed less than 20 hours per week and approximately one quarter viewed in excess of 40 hours. Substantial viewing occurred before school and while eating the evening meal; viewing tended to take place in the company of others rather than alone. The most popular channels viewed were the commercial channels especially Channels 0 and 9 and clear evidence of rejection of Channel 2 was recorded. Children tended not to watch news, documentary or educational programs, reflecting the function of television primarily as a means of entertainment rather than education.

Sex was not a factor associated with the time spent viewing television, but was a factor associated with the choice of favourite program and the time viewed in the program categories.

Children who viewed much television seemed also to be children who came from homes where the father was in a low status occupation and where the father or the mother were less educated, who were subjected to less parental restriction on their viewing and who were less intelligent. Children who did less well at school tended also to be those children who watched a large amount of television.

CHAPTER 6

CAUSAL INTERRELATIONS

The bivariate analysis of the data presented in Chapter 5 suggests relationships of considerable interest in the examination of the relationships between home background, personal characteristics, television viewing and school performance. In that Chapter causality between the variables was not implied and the relationships were examined by considering only two variables at a time. However, the relationships are likely to be more complex; variation in a single variable will occur as a result of variation in a number of antecedents and interrelationships are likely to occur between variables such that the impact of a single variable on another may be direct and in addition indirect through other variables acting as intermediaries or intervening variables. Therefore it is proposed in this Chapter to undertake a more detailed examination of the hypothesised causal links between the variables. In addition it is planned to estimate parameters of the causal models advanced in Chapter 3. Taking selected variables from the sets of home background variables, personal characteristics, television viewing and school performance, causal path models were hypothesised in Chapter 3 as showing the complex nature of interrelationships between the variables. The variables included in the path models were father's occupation, IQ, parental control of television viewing, peer association, self esteem, total television viewing time, comprehension in social studies and overall school performance. It is proposed to present in this Chapter the results of the examination and testing of the path models using multiple regression analysis. In addition, it is proposed to extend the analysis of the pattern of television viewing to canonical correlation analysis in order to provide a more parsimonious description of the relationship between the factors influencing television viewing and the pattern of television viewing itself. Canonical amalysis enables the examination of the relationship between a set of variables taken to be antecedents and a set of variables as the criterion.

The Path Models

Three path models were proposed for testing: one showing total television time as the criterion, one including comprehension in social studies as a measure of school performance, and the other including teacher assessment of overall school performance. In each of the models, the path coefficients

Table 6.1 Unstandardised and Standardised Regression Weights for the Path Models

Criterion Measures	Predictor Measures							
	Unstandardised Regression Weights[a]							
	Father's Occupation	IQ	Parental Control	Peer Association	Self Esteem	Total TV Viewing Time	R	R^2
Peer Association	-0.22	0.49	0.37				0.34	0.11
Self Esteem	0.99	0.16	0.84	1.00			0.46	0.22
Total TV Viewing Time	0.71	-0.24	-2.89	1.41	0.27		0.43	0.18
Social Studies Comprehension	0.11	0.52	-0.38	-0.98	0.49	0.52	0.76	0.58
School Achievement - Teacher Assessment	0.10	0.77	0.66	0.28	0.47	-0.19	0.77	0.59
	Standardised Regression Weights[a]							
IQ	0.31[b]							
Parental Control	0.12[b]	0.17[b]						
Peer Association	-0.04	0.34	0.02					
Self Esteem	0.04	0.28	0.10	0.24				
Total TV Viewing Time	-0.19	-0.24	-0.20	0.20	0.02			
Social Studies Comprehension	0.04	0.75	0.04	-0.00	0.04	0.08		
School Achievement - Teacher Assessment	-0.00	0.52	0.03	0.27	0.19	-0.01		

[a]Regression weights found to be significant at the ten per cent level are underlined

[b]Product-moment correlation coefficients found to be significant at the five per cent level

were estimated by a series of multiple regression analyses with the ten per cent level for the entry and removal of variables used to identify the significant path coefficients. Table 6.1 presents the results of the initial regression analysis with the path coefficients expressed as both unstandardised and standardised regression weights. The non-causal relationships are shown by the product-moment correlation coefficients.

Figures 6.1, 6.2 and 6.3 show the causal paths which were found to be significant at the ten per cent level with those found not to be significant at this level deleted from the regression analysis; the path coefficients shown in the diagrams are the standardised regression weights. The correlation coefficients for the non-causal relationships were found to be significant at the five per cent level.

Factors Influencing Amount of Television Viewing

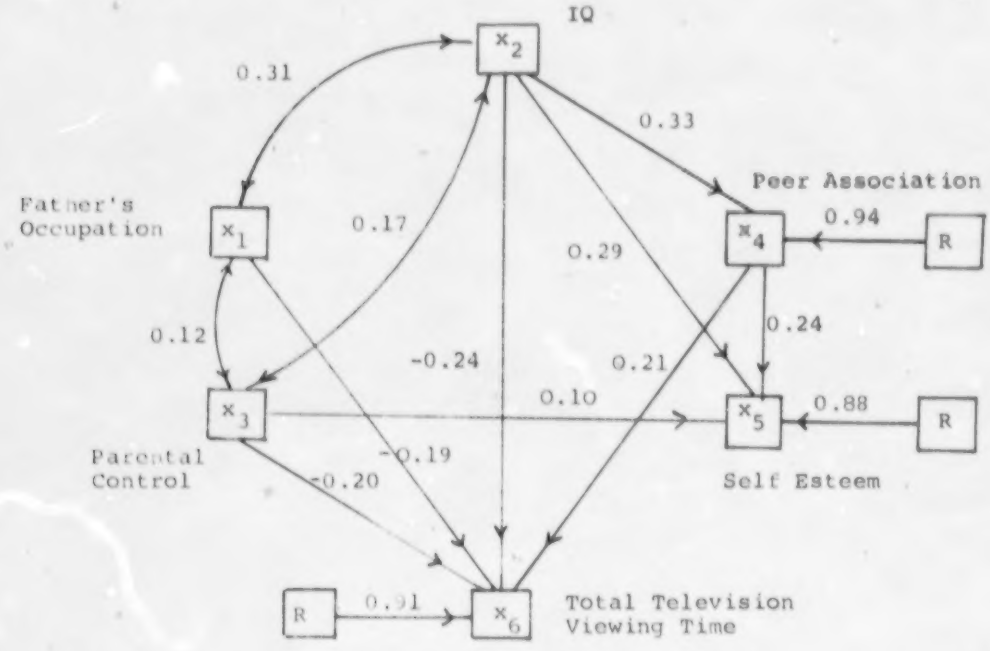

Figure 6.1 A Path Diagram for a Causal Model of Total Television Viewing Time

The path model hypothesised that the total amount of television viewing would be influenced directly by the occupation of the father, intelligence, level of parental control, degree of association with peers and self esteem; that father's occupation would have an indirect impact through peer association and self esteem and that self esteem as an influence on television viewing would be largely dependent upon father's occupation, intelligence, parental control and peer association. Non-causal relationships between parental control and IQ, parental control and father's occupation, and IQ and father's occupation were also suggested.

The analysis confirmed the direct influence of father's occupation, intelligence, parental control of television viewing, and level of peer association on television viewing, these factors accounting for 18 per cent of the variance. The proposed relationship between self esteem and television viewing failed to reach significance. The occupation of the father had a small association with the level of control of viewing exercised in the home but was found not to be significant in influencing the level of peer association or self esteem. Self esteem was found to be influenced by IQ, parental control and peer association. Parental control was found not to influence peer association. The associations between parental control and IQ, and IQ and father's occupation were also found to be significant.

There are a number of points in these results which warrant discussion.

Children who experienced parental control of their television viewing viewed less television, but the level of this control seemed to be related to the social status of the home only in a marginal way.

Apparently, the way one feels about one's self is not related to a significant degree to father's occupation. However, the failure of this postulated relationship to reach significance may be in part accounted for by the tendency for a child's perceptions of himself to be formed relative to those of his age mates within a single institution, rather than formed within a broader community setting. If the occupation of the fathers of the children with whom a particular child associates are close in status to the child's father's occupation, then it is to be expected that this factor will have a less impact on the child's self esteem.

The result of most interest is the apparent lack of a relationship between self esteem and television viewing. It was suggested that children use television as a means of escape from their emotional problems and, therefore, one would expect that a child who has a low opinion of him/herself

would watch more television. The lack of realisation of this result in this study seems contrary to the findings of the majority of studies reported in Chapter 2 and particularly the Australian study (Edgar, 1977) of the relationship between self esteem and television viewing and other media use. Edgar was able to show clearly low esteem children as the highest users of television, movies and radio but no similar result occurs in this study, when total hours viewed is the measure of television use. It is true, however that the bivariate analysis showed a minor negative correlation between self esteem and the viewing of cartoons ($r = -0.11$). It may be therefore that the use of television as a mechanism for escape may be related to particular types of viewing rather than overall use of television. The fact that cartoons are heavily fantasy orientated in their content would lend support to this possibility. Certainly this study throws some doubt on the escapism hypothesis and it is apparent that further investigation is needed to clarify this issue. In addition, it may be that the situation which Furu (1971) suggested as applying to Japanese children applies to Melbourne children: that is, that excessive television viewing is not the mechanism for escape but that activities such as thinking alone, playing sports, keeping a diary fulfil this function.

The bivariate analysis reported in Table 5.12 seemed to indicate that no relationships existed between the time devoted to the viewing of television and peer association except that children who get on well with their peers tended to view more sports programs. However, in the multivariate analysis of the data the relationship between peer association and total television viewing time did emerge as significant when the impact of the other variables of father's occupation, intelligence and parental control of television viewing were taken into account. The path coefficient between peer association and total television viewing time was significant at the same level as was applied to the simple correlation coefficients, that is, five per cent.

Television Viewing and School Performance

Two measures of school performance were used: comprehension in social studies and overall school performance as rated by teachers. In both cases, the model hypothesised that school performance would be directly influenced by father's occupation, intelligence, parental control, peer association and self esteem and that the amount of television viewing would also affect school performance and that television viewing would be an important intervening variable between father's occupation, intelligence, parental control, peer association

and self esteem in influencing school achievement.

It should be noted that school achievement is being examined in the models after controlling for intelligence. However, it is possible, and indeed probable, that extensive television viewing over the life of the child will influence intellectual development (Emery and Emery, 1975; College Examination Board, Report of Advisory Panel on the Scholastic Aptitude Score Decline, 1977). This model takes no account of this effect of television viewing.

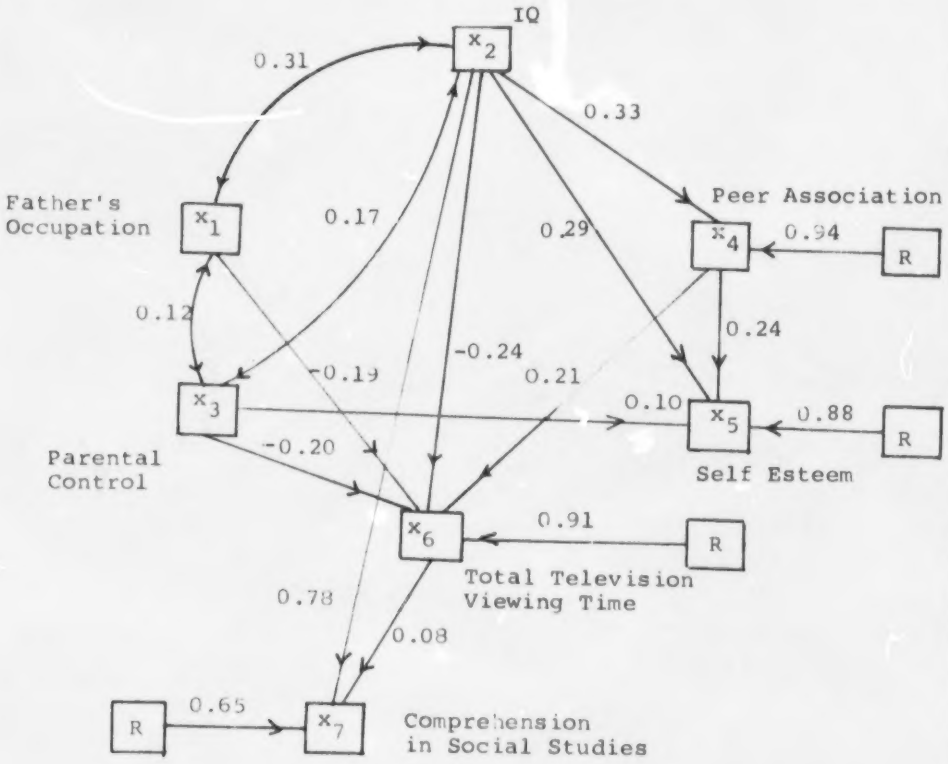

Figure 6.2 A Path Diagram for a Causal Model of Comprehension in Social Studies

Comprehension in Social Studies The analysis failed to confirm a direct impact of father's occupation, parental control, peer association and self esteem on comprehension in social studies, and shows intelligence as the major factor determining comprehension in social studies. The amount of television viewing is shown to have a minor but positive impact with the two factors of intelligence and television viewing together accounting for 58 per cent of the variance; it would seem that the viewing of television has a beneficial effect on school performance in this area after controlling for the effects of intelligence or general ability.

Overall School Achievement - Teacher Assessment As indicated in Figure 6.3 the factors found to be significant in influencing overall school performance as rated by teachers were intelligence as the major factor, peer association and self esteem with approximately 59 per cent of the variance in school performance being accounted for by these factors. Father's occupation and the amount of television viewing were found not to exert an influence significant at the 10 per cent level. Children who were rated by their teachers as doing well at school are those who are more intelligent, get on well with their peers and who have a high self regard for themselves. It appears that the occupation of the father, parental control and the amount of television viewing do not affect overall school performance, at least as it is rated by the teachers.

There are a number of points of interest in the results of the study as they relate to television viewing and its impact on school performance.

The expected almost overriding impact of basic ability as measured by intelligence on school performance was found; getting on with peers and self esteem seemed also to affect performance as rated by teachers but to a relatively minor degree.

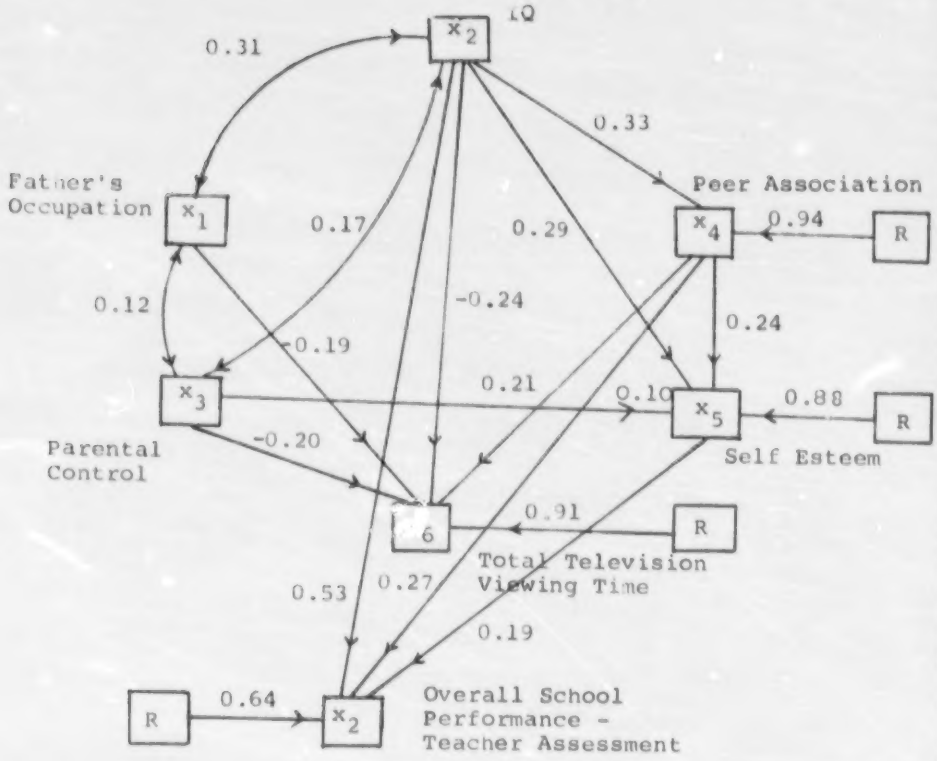

Figure 6.3 A Path Diagram for a Causal Model of Overall School Achievement - Teacher Assessment

The bivariate analysis produced negative correlations, significant at the five per cent level, between total television time and overall school performance and performance on the test of comprehension in social studies; these correlations were reported in Table 5.14. However, in the multiple regression analyses, this relationship did not emerge as significant. The path between total television viewing and overall school performance failed to reach significance at the ten per cent level although the sign of the coefficient was negative, and the path between total television viewing and comprehension in social studies reached significance but as a positive relationship. This result highlights the possibility of reaching hasty conclusions on the basis of simple correlations and of the necessity of viewing relationships in this area within a broader context of interrelationships between relevant causal factors. On the basis of the multiple regression analysis, it could not be concluded that the amount of television viewing has any impact on overall school performance but in relation to a particular component of school performance, that is, comprehension in social studies, it does have an impact such that watching television seems to improve performance in this area when the factor of general ability is also taken into consideration.

On the basis of these results, there seems to be no justification for the stand that watching television harms school performance and therefore that any curtailment of television viewing would improve school performance. Less time spent watching television would not necessarily mean more time spent on school work. As pointed out earlier, the introduction of television tends to replace activities which are functionally related to it, (going to movies, reading comics) with a lack of effect on activities such as school work which are not functionally close to television viewing.

The positive relationship between television viewing and comprehension in social studies needs clarification. There can be no challenge to the point that television does broaden the experiences of children and, although they tend not to seek out television for an educational purpose, a good deal is learned while being entertained, although much of what is learned in this way may have little direct relevance to the school curriculum. However, watching television does involve visual and auditory skills and it is these aspects which may provide at least a possible part explanation of the apparent positive relationship between watching television and performance on a test of comprehension in social studies. The test of comprehension in social studies used in this study is a content free, multiple choice, objective test in

which much of the material is presented in pictorial and graphical form and therefore involving visual skills which one might expect to be similar to those exercised during the watching of television and which are capable of being transferred to the classroom situation. Consequently, it may be that the positive relationship between television viewing and performance on this test of comprehension in social studies is to be expected.

Canonical Analysis of the Pattern of Television Viewing

Multiple regression analysis enables the examination of one criterion measure at a time. In the above analysis, the total hours spent watching television over a designated seven day period was the method used to measure the child's use of television. Yet the child's use of television is multi-faceted in nature involving not only how much is viewed but also program choice, channels preferred and other aspects of viewing behaviour such as when the viewing took place, whether the viewing occurs alone or in company, and the nature of the other activities that might be engaged in while viewing is in progress.

The study provided data on hours viewed in nine program categories, hours viewed for each of the four channels and information relating to the frequency of viewing before school, alone and during meals.

Three canonical analyses were undertaken on each of three sets of television viewing variables as criterion measures, and in each of these analyses the variables sex, father's occupation, IQ, peer association, self esteem and degree of parental control of viewing formed the set of predictor measures.

Hours Viewed in Program Categories

Table 6.2 shows the results of the testing of successive latent roots in the canonical analysis of the data relating to the nine program categories as criterion variables, and the measures of sex, father's occupation, IQ, peer association, self esteem and degree of parental control of viewing as the predictors.

Two of the roots were found to be significant at the 0.1 per cent level while the remaining roots were not significant at the five per cent level. Thus it was concluded that there were two statistically significant ways in which the predictor variables were related to the criterion measures.

From an examination of the transformation weights and particularly the structure coefficients in Table 6.3, it can be seen that the first canonical criterion factor, which extracted 13 per cent of the variance, was

Table 6.2 Canonical Analysis between Predictors and Criteria (Program Categories): Chi-Squared Test of Successive Latent Roots

Number of Roots Removed	Canonical R	R^2	χ^2	df	P
1	0.57	0.32	197.74	54	<0.001
2	0.47	0.22	96.31	40	<0.001
3	0.26	0.07	30.50	28	NS
4	0.16	0.03	12.19	18	NS
5	0.11	0.01	5.03	10	NS
6	0.08	0.01	1.84	4	NS

mainly concerned with the viewing of sport, cartoons and audience participation type programs contrasted with the non-viewing of children's educational programs. The second canonical criterion factor, which extracted 24 per cent of the total variance after the first canonical variate was extracted, involved viewing across all categories except news and sports contrasted with the non-viewing of documentary programs. The first canonical variate of the predictor measures seemed to be heavily related to sex and also marginally related to father's occupation and parental control and extracted 19 per cent of the variance. The second canonical variate of the predictor measures could be described as a home background, intelligence, degree of parental control factor with a sex influence and extracted 19 per cent of the total variance. Table 6.3 also provides canonical correlations and the redundancy of the variance of the criteria given the predictors.

The analysis showed a relatively strong correlation between the first pair of canonical variates ($R_c = 0.57$, $R_c^2 = 0.32$); boys who came from homes where the father was in a low status occupation and who experienced less parental control viewed more sports, cartoons, quiz and audience participation type programs and less children's educational programs. A moderate correlation existed between the second pair of canonical variates ($R_c = 0.47$, $R_c^2 = 0.22$). Children who viewed across most program categories particularly drama, religious, quiz and audience participation, and variety type programs and non-viewers of documentary type programs, tended to be children of lower IQ, from homes where the father was in a lower status occupation and where parental control of viewing was less and to be girls. The results of this analysis would seem to indicate that children watch quiz and audience participation

Table 6.3 Transformation Weights and Structure Coeeficients for Canonical Analysis between Predictors and Criteria (Program Categories)

	Transformation weights		Structure Coefficients	
Predictor Measures	U_1	U_2	U_1	U_2
Sex	-0.86	0.47	-0.91	0.37
Father's Occupation	-0.26	-0.45	-0.34	-0.61
IQ	-0.07	-0.58	-0.16	-0.62
Self Esteem	-0.02	0.16	-0.07	-0.11
Peer Association	0.22	0.26	0.21	0.04
Parental Control	-0.23	-0.41	-0.33	-0.48
Variance Extracted	0.19	0.19		
Criterion Measures	V_1	V_2	V_1	V_2
News	0.01	0.20	0.15	0.21
Documentary	0.22	-0.30	0.20	-0.34
Children's Educational	-0.31	0.11	-0.32	0.45
Religious	0.03	0.29	0.00	0.59
Quiz Audience Participation	0.26	0.27	0.30	0.53
Sport	0.61	-0.17	0.74	-0.03
Variety	-0.36	0.10	-0.20	0.52
Drama	0.04	0.45	0.08	0.81
Cartoons	0.44	0.16	0.54	0.48
Variance Extracted	0.13	0.24		
Canonical R	0.57	0.47		
Canonical R^2	0.32	0.22		
Redundancy of Criteria given Predictors	0.04	0.05		

programs not for the information that they might provide but for their entertainment value. The appearance of a moderately high loading of religious programs on the second canonical factor of the criterion set might be explained by the lack of alternative viewing on Sunday mornings and therefore reflect addictive viewing habits rather than preference for religious programs.

It is the measure of redundancy which indicates the strength of the relationship for it shows the proportion of the variance in a set of measures accounted for by the factor of the other set. In relation to the first set of canonical variates, it can be seen that the first factor accounted for four per cent of the variation in time viewed in program categories and the second factor accounted for five per cent of the variation in the criterion measures.

Channels Preferred

In Table 6.4, the results are given of the testing of successive latent roots using the same predictor measures as the analysis immediately above and the hours viewed of each of the four television channels.

Only one of the latent roots was found to be significant at the 0.1 per cent level and all others were not significant at the five per cent level. Thus there was one statistically significant way in which the predictor variables were related to the criterion measures.

An examination of Table 6.5 which shows the transformation weights and structure coefficients for the two sets of canonical variates, suggests that the canonical criterion factor mainly concerned the viewing of commercial channels, particularly Channels ATV0 and GTV9 and not viewing the national channel ABV2. The canonical criterion factor extracted 30 per cent of the variance.

An examination of the structure coefficients of the predictor set indicates that the canonical variate related to home background, intelligence and parental control and extracted 21 per cent of the variance.

The two canonical variates were moderately related ($R_c = 0.52$, $R_c^2 = 0.27$). It would seen the children preferred the commercial channels especially Channels 0 and 9 were those who came from homes where the father was in a lower status occupation, who were less intelligent and who experienced less parental control of their viewing. The home background, intelligence and parental control factor account for eight per cent of the variation in time viewed for each channel.

Table 6.4 Canonical Analysis between Predictors and Criteria (Channels Viewed): Chi-Squared Tests of Successive Latent Roots

Number of Roots Removed	Canonical R	R^2	χ^2	df	P
1	0.52	0.27	101.97	24	<0.001
2	0.23	0.05	20.44	15	NS
3	0.13	0.02	6.35	8	NS
4	0.08	0.00	1.51	3	NS

Table 6.5 Transformation Weights and Structure Coefficients for Canonical Analysis between Predictors and Criteria (Channels Viewed)

	Transformation Weights	Structure Coefficients
Predictor Measures	U_1	U_1
Sex	-0.00	-0.10
Father's Occupation	-0.53	-0.72
IQ	-0.59	-0.67
Self Esteem	0.17	-0.12
Peer Association	0.27	0.06
Parental Control	-0.42	-0.53
Variance Extracted	0.21	
Criterion Measures	V_1	V_1
ATV0	0.82	0.89
ABV2	-0.21	-0.19
HSV7	0.14	0.22
GTV9	0.37	0.55
Variance Extracted	0.30	
Canonical R	0.52	
Canonical R^2	0.27	
Redundancy of Criteria given Predictors	0.08	

Table 6.6 Canonical Analysis between Predictors and Criteria (Aspects of Television Behaviour): Chi-Squared Tests of Successive Latent Roots

Number of Roots Removed	Canonical R	R^2	χ^2	df	P
1	0.29	0.08	28.90	18	<0.05
2	0.11	0.01	5.53	10	NS
3	0.09	0.00	2.24	4	NS

Table 6.7 Transformation Weights and Structure Coefficients for Canonical Analysis between Predictors and Criteria (Aspects of Television Behaviour

	Transformation Weights	Structure Coefficients
Predictor Measures	U_1	U_1
Sex	-0.60	-0.67
Father's Occupation	-0.35	-0.54
IQ	-0.45	-0.60
Self Esteem	0.05	-0.23
Peer Association	0.06	-0.08
Parental Control	-0.33	-0.48
Variance Extracted	0.23	
Criterion Measures	V_1	V_1
TV Alone	0.65	0.79
TV Before School	0.62	0.75
TV While Eating	0.02	0.27
Variance Extracted	0.42	
Canonical R	0.29	
Canonical R^2	0.08	
Redundancy of Criteria given Predictors	0.04	

Other Aspects of Television Viewing

The children's responses to questions relating to whether viewing was engaged in alone, before school or while eating the evening meal were also subjected to canonical correlation analysis.

Table 6.6 shows that there was only one way in which the two sets of variable were significantly related at the five per cent level.

An examination of the transformation weights and structure coefficients in Table 6.7 reveals that the canonical variate of the criterion set mainly related to viewing alone and before school and that the canonical variate of the predictor set mainly related to home background, intelligence, parental control with a heavy sex influence. The canonical variate of the criterion measures extracted 42 per cent of the variance; the canonical variate of the predictor measures extracted 23 per cent of the variance.

The correlation between the canonical variates was not particularly strong ($R_c = 0.29$, $R_c^2 = 0.08$) but there was a clear tendency for the children who watched before school and alone to be boys who were less intelligent, who came from homes where the father was in a lower status occupation and who experienced less parental control of their viewing habits; this factor accounted for four per cent of the variation in the measures of other aspects of television viewing.

There are a number of points of interest arising out of the canonical correlation analysis of the relationships between certain home background and personal characteristics on the one hand and television viewing variables on the other. The analysis supported the earlier conclusion that sex was an important variable in determining what was watched on television. It also showed that the background of the home, intelligence and degree of parental control were important variables in influencing what was watched on television but they were also important in determining channels preferred, and whether viewing occurred alone and before school although in the case of viewing alone and before school, sex was combined with the home background, intelligence and parental control factor.

Summary

The testing of models generally confirmed the importance of the factors of home background, parental control, intelligence and association with peers in influencing the total time children spend watching television. The anticipated negative relationship between self esteem and television viewing was

not found which throws some doubt on the function of television as a means of escape from personal problems. The relationship between peer association and total television viewing time did not eventuate from the bivariate correlation analysis but was significant when the impact of the variables of father's occupation, intelligence and parental control were taken into account. Children who experienced high levels of parental control watched less television but this factor was found to be associated with the home background as measured by the occupational status of the father only to a relatively minor degree.

The major factor affecting school performance was found to be general ability as measured by the intelligence test used. Teachers tended to rate children who get on well with their peers and have a high self esteem as performing better at school. Negative relationships between school performance and television viewing found in the bivariate analysis were not significant in the multivariate analysis. When intelligence was controlled, there appeared to be no significant impact of television viewing on overall school performance, but a significant beneficial effect occurred on performance in social studies comprehension from television viewing.

Boys whose fathers were in lower status occupations and who experienced lower levels of parental control viewed more sports, cartoons and audience participation type programs and less children's educational programs. Viewers of program categories except news and sports, combined with the non-viewing of documentary programs, tended to be of lower IQ, to have fathers in lower status occupations, to have experienced less parental control and to be girls. Children from homes where the father was employed in a low status occupation and who were less intelligent and who experienced less restriction on their viewing tended to view more of Channels 0 and 9. Boys who were less intelligent, from homes where the father was in a low status occupation and who experienced less parental control viewed more before school and alone.

CHAPTER 7

CONCLUSION

The purposes of this inquiry were to present a description of the television viewing habits of Grade 6 children in Victorian Education Department primary schools within the metropolitan area of Melbourne; to examine the nature of the relationships between factors found to be relevant in explaining television behaviour; and to examine the relationship between television behaviour and school achievement.

The investigation was undertaken within the broader context of the educational environments of the home, the school and the peer group which were recognized as the major environmental situations, but also incorporating the media as an important component. The investigation was undertaken with the realization that these components of the educational environment were interrelated in a complex manner to affect the socialization process and educational outcomes.

Data for the study were collected from a two stage cluster sample of 271 children in Grade 6 of government primary schools in the metropolitan area of Melbourne. It was recognized that there were primary schools in the independent school system with substantial enrolments in Grade 6 and consequently the sample could not be considered to be representative of all children in the grade group in Melbourne; therefore any generalizations from the results of this study would have to be confined to the state school system. In addition, a simple random sample was not employed because of the logistic difficulties involved. While recognizing that there would be a design effect on the sampling errors as a consequence of the departure from the simple random design it was considered that correction for this factor was unnecessarily complex given the essentially exploratory nature of the investigation. It should be noted, however, that the levels of significance employed were thus more liberal than they would have been if allowance had been made for design effects. Thus for factors which failed to reach significance in the analysis there would be less likelihood of their attaining significance if more conservative procedures had been employed, while for those results which have been reported as significant in this study, there would also be less likelihood of their emergence as significant in future investigations which made allowance for the design effect in testing for significance.

Data for the study were collected by a questionnaire administered to the students sampled, by tests of intelligence, self esteem and comprehension in social studies, and by a diary of television viewing over a period of seven days. A questionnaire was also completed by the teachers of the students in the sample. The tests and questionnaires were administered during July 1977 and the diary of television viewing was completed over the period July 30 to August 5, 1977. In this way a complex body of data was gathered to enable a description of the pattern of television viewing and to examine and test causal models of the relationships between certain home background variables, personal characteristics, television viewing and school performance. The statistical analyses used involved simple descriptive statistics, bivariate correlation and multiple regression analyses, and canonical analysis.

The hypothesising and subsequent testing of causal path models of the interrelationships between home background variables, personal characteristics, television viewing, and school performance represented an approach not previously employed in studies into the factors affecting television use by children and enabled this investigation to cope more efficiently with the complex interrelationships between the variables. In addition, the incorporation of the school performance variables into the path model enabled a closer examination of the relationships between school performance and home viewing of television. Past studies into the relationship between television viewing and school performance had produced mixed and inconclusive results largely because of their failure to take into account the factors other than television use which were likely to affect performance at school. The impact of television on school performance was likely to be marginal anyway and in those circumstnaces it was most important that in analysing the data an attempt was made to control for as many of the other variables as practicable. This study was able to turn up some interesting conclusions regarding the relationship between school performance and television viewing and point to questions for further investigation in this area.

It should be pointed out that the nature of this investigation necessitated that the measurement of the variables which were considered as being related to television viewing and school performance, and the criterion variables of television viewing and school performance themselves, be in terms of absolute levels rather than changes over time. It is suggested that a clearer insight into the impact of television on school achievement would be gained if change in school performance could be measured over a limited period of time and the relevant features of the educational environment

including media usage related to that change. It is recognized that this approach would necessitate fairly large scale longitudinal studies of the problem.

The multi-faceted nature of the pattern of television behaviour was also recognized in this study. Television behaviour involved not only how much was watched, but also what was watched, and other aspects such as when the viewing occurred, whether it occurred alone or in company, and what other activities might be engaged in while the television set was on. The study sought to examine the relationships between home background variables and personal characteristics on one hand and television behaviour as a multi-faceted variable through the use of canonical correlation analysis. Three canonical analyses were undertaken. In each analysis sex, father's occupation, intelligence, self esteem, peer association and parental control of television viewing formed the set of predictor measures while time viewed in nine program categories, time viewed for each channel and whether viewing occurred before school, alone or while eating, were in three sets of criterion measures. This sophisticated multivariate statistical technique enabled the drawing of conclusions about the underlying factors in both the predictor and criterion sets and the correlation between them and represented an advancement on multiple regression analysis which enabled the examination of only one criterion measure at a time.

Results of the Study

The results of the study confirmed the important influence that television had on the lives of children. All the children except one had ready access to television and children devoted on average a very substantial part of their lives to its use. The mean average viewing time over a seven day period as recorded in the TV viewing diary amounted to 28.3 hours with 25 per cent of the children viewing in excess of 40 hours. The children preferred programs which entertained rather than those which had an educational purpose and the choice of channel revealed a marked bias in favour of the commercial channels, particularly Channels 0 and 9, and away from Channel 2. Television before school was engaged in most times by approximately one third of the children, but a further third indicated that they never watched television before school; approximately 40 per cent watched television while eating the evening meal and only about ten per cent usually watched television alone. There appeared to be no significant difference in the time that boys or girls devoted to television viewing but strong sex differences appeared in

program choice and favourite programs. Girls seemed to prefer family situation type and variety type programs with a heavy dominance of female characters while sports and adventure type programs dominated the preferences of boys.

The study confirmed the importance of home background variables and personal characteristics as important influences of television viewing patterns. The simple correlations showed negative associations between the amount of television viewed on the one hand and father's occupational status, father's and mother's education, and degree of parental control of viewing on the other hand. High parental control seemed to be associated with less viewing across program categories and with less viewing alone. Children of better educated fathers watched more documentary programs but less of most other program categories. A negative relationship was found between the viewing of Channels 9 and 0 on the one hand and father's occupational status and father's and mother's education on the other hand while children of fathers in high status occupations watched more programs on Channel 2. Watching television before school and alone occurred more in homes of low occupational and educational status of the father. More intelligent children viewed less television overall; no significant relationships were found between intelligence and the viewing of documentary and children's educational programs. The more intelligent children viewed less of Channels 0 and 9 and viewed less before school and alone. No significant relationship between self esteem and television viewing was found except for a slight tendency for children of low self esteem particularly in relation to parents and peers, to have viewed more cartoons. Children with low self esteem in relation to school viewed more before school. It was found that getting on with peers varied positively with the watching of sports programs, but had no significant relationship to total viewing time, choice of channel, viewing before school, alone or while eating the evening meal.

The testing of the causal path model of the factors influencing the total time spent watching television showed the key variables to be father's occupation, intelligence, peer association and level of parental control, these factors together accounted for 18 per cent of the variance in total television viewing time. The postulated relationships between father's occupation and peer association, father's occupation and self esteem, parental control and peer association, and self esteem and total television viewing time failed to reach significance.

The canonical correlation analysis of the pattern of television viewing revealed a tendency for boys who came from homes where the father was in a low status occupation and who experienced low parental control to view more sports, cartoons, quiz and audience participation type programs and less children's educational programs. Viewers of most of the program categories except news and sports, combined with a bias away from the viewing of documentary type programs tended to be of lower IQ, to have fathers in lower status occupations, to experience lower parental restriction and to be girls. Children, from homes where the father was employed in a low status occupation and who were less intelligent and who experienced lower levels of parental control preferred to watch the commercial channels especially Channels 0 and 9 and not to watch Channel 2. Boys, who were less intelligent, who came from homes where the father was in a lower status occupation and who experienced less parental control of their viewing habits, viewed more before school and alone.

With respect to the relationship between television viewing and school performance, the simple correlations showed moderate to strong relationships between home background variables and personal characteristics on the one hand and the measures of school performance on the other. On the basis of simple correlations heavy viewers of television appeared to do less well at school both in terms of overall performance as rated by teachers and in relation to comprehension in social studies. No significant relationships were found between teacher assessment of over/under achievement and television viewing.

The testing of the causal path model which incorporated overall school performance showed intelligence, peer association and self esteem to be the factors influencing overall school achievement; these factors accounted for 59 per cent of the variance in school achievement. The postulated impact of father's occupation, parental control and total television viewing time on school achievement failed to reach significance.

The testing of the causal path model which incorporated the test of comprehension in social studies showed the substantial influence of intelligence on performance in this test but also showed a minor but positive impact of television viewing; these two factors accounted for 58 per cent of the variance in performance on the test of comprehension in social studies. The postulated influence of father's occupation, parental control, peer association and self esteem on comprehension in social studies failed to reach significance.

Implications for Further Research and Practice

The study was carried out within the theoretical context of the educational environment as proposed by Keeves (1972) but with the recognition of the media as well as the home school and peer group are important components of that environment. The study focused on television as a major part of the media and sought to articulate the factors influencing the use of television by children and the impact of the use of television on performance at school. Causal path models were hypothesised and tested using multiple regression analysis and the pattern of television viewing was examined using canonical analysis. By the use of these statistical techniques meaningful results were obtained and showed these techniques to be both appropriate, feasible and necessary for the effective examination of the complex relationships that existed in this field of research. Researchers into the area of media use and its impact should seriously consider employing these statistical techniques in future studies.

The results of this study point to a number of specific questions which should be the subject of future investigations and for which the techniques described above would be appropriate.

The study included self esteem as a key variable with potential for explaining television behaviour in the belief that a child who had a low self regard would view more television because of a desire to escape from the emotional and psychological problems which contributed to the low self esteem. However, the results of the study did not find support for this escapism hypothesis when total hours viewed was the measure of television use, but discovered a relationship between the heavy viewing of cartoons and low self esteem. The possibility of a relationship between self esteem and type of program preferred would be a worthwhile subject for further exploration. However in this study it would be necessary to recode the raw data to carry out such an investigation.

The investigation produced some interesting conclusions with respect to the relationship between television viewing and school performance which would provide questions for further research. Simple correlations between total television viewing time and viewing time in program categories on the one hand and teacher rated overall school achievement and comprehension in social studies on the other generally showed the relationships to be negative. However, when the technique of multiple regression was employed in the testing of the path models no significant relationship between overall school

performance and total television viewing time was found. Moreover, it was discovered that television viewing had a positive impact on performance on the test of comprehension in social studies over and above the impact of intelligence. It was recognized that there were limitations to the reliability of teacher estimates of overall school performance which would have consequences for the magnitude of the coefficients involving this variable in the model, and that the positive impact of television viewing on comprehension in social studies might be the consequence of the nature of the particular test used. However, despite these qualifications it might well be that watching television could have a differential effect on school performance dependent upon the particular aspect of school performance being measured and the type of programs. The relationships between type of program viewed and particular components of school performance is suggested as an issue for further investigation and one where canonical correlation analysis would be an appropriate statistical technique.

The study showed parental control of television viewing as an important variable influencing the amount of television watched. However, the study did not attempt to examine in detail the factors influencing parental control. In the causal models, non-causal associations between parental control on the one hand and father's occupation and intelligence on the other were assumed and although significant correlations between parental control and father's occupation and intelligence were found in the data for this study their magnitude was small. Within the limitation of the reliability of the measure of parental control it was apparent that the important factors influencing parental control were exogenous to the causal model hypothesised for the study. Further investigation is required in order to gain insight into the factors which affect parental control. The need for further study of this variable is strengthened when it is realized that of all the factors which have been found in this study to influence viewing control by parents is the one which would be most malleable. The degree of parental control of television viewing would be a reflection of the attitudes of parents to this medium and the media in general. Parents who were concerned about the amount of television that their children watched would consciously control the exposure of their children to television. The findings of the study suggest that if other groups in the community, for example, school teachers who might also be concerned, were to concentrate their efforts on persuading parents that they should control the viewing habits of their children then greater effects might be achieved. However, it should be pointed out that this study

provided no support for the proposition that school performance would be harmed by television viewing and therefore any argument for more parental control of television viewing on the basis of the results of this study would be misplaced. However, the arguments for the greater control of children's viewing might be based on other grounds; for example, the desirability of children engaging in other leisure pursuits or because of the possible impact of television on children's tastes, attitudes and social behaviour.

Parental control of viewing could be exercised in a variety of ways; by parental example, by providing a range of other worthwhile activities which would attract the interest of children away from the television set or by more authoritarian measures. It is suggested that worthwhile future research might concentrate on discovering the most effective techniques by which parents might control the way their children use television.

In addition this study did not take into account the way the school might directly affect the viewing behaviour of its pupils. It would appear that more and more teachers were using the television experiences of the children in the classroom and as a consequence one would expect that this would exert an influence on the viewing habits of their pupils. The relationship between the attitudes of teachers towards television and the viewing behaviour of their pupils would be an interesting aspect to explore in future research.

This inquiry was undertaken with the general objective of investigating the interrelationships that existed in the educational environment of children with an emphasis on the role that television, as an important element of the mass media, performed in association with the other components of the educational environment in influencing school achievement. It was an exploratory study of a complex problem. It has described the television viewing behaviour of Grade 6 children in government primary schools in the metropolitan area of Melbourne. The data collected were used to explore the factors influencing television viewing behaviour and to test hypothesised models of the relationship between home background, personal characteristics, television viewing and school achievement. While this study has not produced definitive conclusions, it has shown that multivariate techniques can and should be used in investigations into the area of media use by children. In addition, it has directed attention to a number of areas which could usefully be investigated further, and has made some tentative recommendations associated with educational practice.

REFERENCES

Allen, C. Photographing the TV audience. Journal of Advertising Research. 5: 1965, 2-8.

Atkin, C., and Gantz, W. How children use television news programming: patterns of exposure and effects. Paper presented at the annual meeting of the International Communication Association New Oleans: April, 1974.

Australian Broadcasting Commission. The small child audiences: radio and television compared. ABC Research Survey, 1973.

Australian Council for Educational Research. Otis intermediate test manual (revised). Hawthorn, Victoria: Australian Council for Educational Research, 1964.

Bailyn, L. Mass media and children: a study of exposure and habits and cognitive effects. Psychological Monographs: General and Applied, 73, (1), 1-48.

Bechtel, R.B., Achelpohl, C. and Akers, R. Correlations between observed behaviour and questionnaire responses on television viewing. In E.A. Rubinstein, G.A. Comstock and J.P. Murray (eds.), Television and social behaviour. Vol. 4 Television in day-to-day life: patterns of use. Washington: U.S. Government Printing Office, 1972.

Belson, W.A. The impact of television. Melbourne: Cheshire, 1967.

Blood, R. Social class and family control of television viewing. Merrill-Palmer Quarterly, 7, 1961, 205-222.

Broom, L., and Jones, F.L. Career mobility in three societies: Australia, Italy and the United States. American Sociological Review, 64, (5), 1969, 656-658.

Broom, L., Jones, F.L. and Zubrzycki, J. An occupational classification of the Australian workforce. Supplement to Australian and New Zealand Journal of Sociology, 1, (2), 1965, 1-16.

Broom, L., Jones, F.L. and Zubrzycki, J. Social stratification in Australia. In J.A. Jackson (ed.) Social stratification: sociological studies 1. Cambridge: Cambridge University Press, 1968.

Brown, J.R., Crammond, J.K. and Wilde, R.J. Displacement effects of television and the child's functional orientation to media. In J.G. Blumler and E. Katz (eds.). The uses of mass communications. Beverly Hills: Sage Publications, 1974.

Campbell, W.J. and Keogh, R. Television and the Australian adolescent: a Sydney survey. Sydney: Angus and Robertson, 1962.

Canavan, K. Children's television viewing habits and parental control. Education News, 14, (11), 1974, 12-19.

Chaffee, S., McLeod, J. and Atkin, C. Parental influences on adolescent media use. American Behavioral Scientist, 14, 1971, 16-34.

Childers, P.R. and Ross, J. The relationship between television viewing and student achievement. Journal of Educational Research, 66, (7), 1973, 317-319.

Clark, J.F. and Olley, A.K. Pre-television social survey: the interest and activities of families in Sydney. 2 volumes. Sydney: New South Wales University of Technology, 1958.

Clarke, P.N. Family structure and children's television viewing patterns. Unpublished Thesis for Degree of Master of Education, Monash University, 1975.

Clark, W.J. Of children and television. Cincinatti: Xavier University, 1951.

College Entrance Examination Board. On further examination. Report of the advisory panel on the scholastic aptitude test score decline. New York: 1977.

Congalton, A.A. Occupational status in Australia. Kensington: University of New South Wales, 1963.

Cooley, W.W., and Lohnes, P.R. Multivariate data analysis. New York: John Wiley, 1971.

Coopersmith, S. The antecedents of self esteem. San Fransisco: Freeman & Co., 1967.

Coopersmith, S. Self esteem inventory. Notes accompanying test, 1975.

Duggan, E.P. Children at the television set. Times Educational Supplement, 2112, November, 11, 1955, 1165.

Edgar, P., Powell, R.J., Watkins, D., Moore, R.J., and Zakharov, O. An analysis of the Coopersmith self esteem inventory: a discussion of two studies. Australian Psychologist, 9, (3), 1974, 52-63.

Edgar, P. Self perceptions and mass media violence. In D. Edgar (ed.) Social Change in Australia: Cheshire, 1974.

Edgar, P. Children and screen violence. St Lucia: University of Queensland Press, 1977.

Emery, F.E. and Emery, M. A choice of futures: to enlighten or inform. Canberra: Australian National University Centre for Continuing Education, 1975.

Furu, T. The function of television for children and adolescents. Tokyo: Sophia University Press, 1971.

Greenberg, B., Ericson, P. and Vlahos, M. Children's television behaviours as perceived by mother and child. In E.A. Rubinstein, G.A. Comstock and J.P. Murray (eds.), Television and social behaviour. Vol 4 Television in day-to-day life: Patterns of use. Washington: U.S. Government Printing Office, 1972.

Hammond, S.B. and Gleser, H. Mass media preference in adolescence: a study in changing tastes. Melbourne: Australian Broadcasting Control Board, 1971.

Himmelweit, H.T., Oppenheim, A.N., and Vince, P. Television and the child: an empirical study of the effect of television on the young. London: Oxford University Press, 1958.

Johnstone, J.W.S. Social structure and patterns of mass media consumption. University of Chicago, Unpublished Ph.D. Dissertation, 1961.

Katz, E. and Foulkes, D. On the use of the mass media as "escape": clarification of a concept. Public Opinion Quarterly, 26, 1962, 377-388.

Keeves, J.P. Educational environment and student achievement. Stockholm: Almgvist and Wiksell, 1972.

Lyle, J. and Hoffman, H.R. Children's use of television and other media. In E.A. Rubinstein, G.A. Comstock and J.P. Murray (eds.), Television and social behaviour. Vol 4. Television in day-to day life: Patterns of use. Washington: U.S. Government Printing Office, 1972.

Maccoby, E. Television: its impact on school children: Public Opinion Quarterly, 15, 1951, 421-444.

Maccoby, E. Why do children watch television? Public Opinion Quarterly, 18, 1954, 239-244.

Maccoby, E. The effects of television on children. In W. Schramm (ed.), The science of human communication. New York: Boric Books, 1963.

Maletzke, G. Television in the life of youth. Hamburg: Hans Bredow Institute, 1959

Murdock, G.P. and Phelps, G. Youth culture and the school revisited. British Journal of Sociology, 23, 1972, 478-482.

Murray, J.P. Television in inner-city homes: viewing behaviour of young boys. In E.A. Rubinstein, G.A. Comstock and J.P. Murray (eds.), Television and social behaviour. Vol 4. Television in day-to-day life: Patterns of use. Washington: U.S. Government Printing Office, 1972.

Murray, J.P. and Kippax, S. Television and social behaviour in three communities: a field experiment. Australian Journal of Psychology, 29, 1977, 31-43.

McNair, Anderson and Associates Pty. Ltd. Television audience survey. McNair, Anderson and Associates Pty. Ltd., 1977.

Olley, A.K. Post television survey: the effects of television on the interests and activities of families and persons in Sydney. Sydney: School of Applied Psychology. University of New South Wales, 1962.

Patterson, George Pty. Ltd. Status of the media. George Patterson Report, April, 1976.

Pearlin, L. Social and personal stress and escape television viewing. Public Opinion Quarterly, 23, 1959, 255-259.

Powell, R.J. Television viewing by young secondary students: a study of the television viewing behaviour of children at form II level. Melbourne: Australian Broadcasting Control Board, 1971.

Renehan, W.T., and Wilkes, R.A. Report on Victorian primary schools testing programs 1969 - 1970. Hawthorn, Victoria: Australian Council for Educational Research, 1973.

Ridder, J.M. Public opinions and the relationship of television to academic achievement. Journal of Educational Research, 57, (4), 1963, 204-206.

Riley, M.W., and Riley, J.W. A sociological approach to communications research. Public Opinion Quarterly, 15, 1951, 389-407.

Robinson, J.P. Television and leisure time: yesterday, today and (maybe) tomorrow. Public Opinion Quarterly, 33, 1969, 210-222.

Ross, K.N. An examination of the internal structure of the Coopersmith self esteem inventory for Australian 16 year olds. Hawthorn, Victoria: Australian Council for Educational Research, IEA (Australia) Report, 1, 1974.

Ross, K.N. Searching for uncertainty: An empirical investigation of sampling errors in educational survey research. Hawthorn, Victoria: Australian Council for Educational Research, Occassional Paper, 9, 1976.

Royal Commission on Violence in the Communications Industry: Report. Ontario: Queens Printer, 1977.

Schramm, W.J., Lyle, J. and Parker, E.B. Television in the live of our children. Stanford: Stanford University Press, 1961.

Scott, L.F. Television and school achievement. Phi Delta Kappan, 38, 1956, 25-28.

Senate Standing Committee on Education and the Arts. Children and television. Canberra: Australian Government Publishing Service, 1978.

Starkey, J.D. Reading: does TV viewing time affect it? Northern Illinois University, 1974.

Surgeon General's Scientific Advisory Committee on Television and Social Behaviour, Television and growing up: The impact of televised violence. Washington: U.S. Government Printing Office, 1972.

Tatsuoka, M.M. Multivariate analysis in educational research. In F.N. Kerlinger, (ed.). Review of research in education. Itasca, Illinois: 1975.

92

Thomson, J.D. and Keeves, J.P. An introduction to canonical variate analysis. In J.P. Keeves. The performance cycle: motivation and attention as mediating variables in school performance. Hawthorn, Victoria: Australian Council for Educational Research, Home environment and school study report, 5, 1974.

Thomas and Lang. The televiewing habits of secondary school children in greater Geelong in August, 1965. Hawthorn, Victoria: Australian Council for Educational Research, 1966.

Tindall, K. and Reid, D. Television's children. Sydney: Audio-Visual Centre, Sydney Teachers College, 1975.

Tindall, K., Reid, D. and Goodwin, N. Television: 20th century cyclops. Sydney: Audio-Visual Centre, Sydney Teachers College, 1977.